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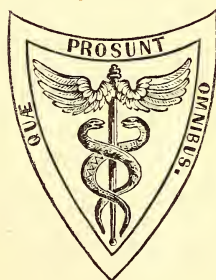


THE
AMERICAN JOURNAL
OF THE
MEDICAL SCIENCES.

EDITED BY
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SURGEON TO WILLS HOSPITAL,
FELLOW OF THE PHILADELPHIA COLLEGE OF PHYSICIANS; MEMBER OF THE
AMERICAN MEDICAL ASSOCIATION; OF THE AMERICAN PHILOSOPHICAL SOCIETY; OF THE
ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA,
&c. &c. &c.

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TO READERS AND CORRESPONDENTS.

THE communications of Drs. JOYNES, BOND, C. P. JOHNSON, and HOLMES, shall appear in our next.

We have on our table a number of publications which we had designed to notice in this No., but have been compelled to defer doing so until our next, when they shall receive due attention.

The following works have been received:—

Recherches sur la Paralyse Générale progressive, pour servir à l'histoire de cette Maladie. Par LE DOCTEUR L. LUNIER. Paris, 1849.

A Treatise on the Inflammations of the Eye-ball: including the idiopathic, scrofulous, rheumatic, arthritic, syphilitic, gonorrhœal, post-febrile, sympathetic, phlebitic, and neuralgic species or varieties; together with Circumscribed Inflammation of the cornea, chamber of aqueous humour, crystalline lens, choroid membranes and retina, and inflammation of the eye from injury. By ARTHUR JACOB, M. D., F. R. C. S., &c. Dublin, 1849. (From the Author.)

On Diseases of Menstruation and Ovarian Inflammation, in connexion with Sterility, Pelvic Tumours, and Affections of the Womb. By EDWARD JOHN TILT, M. D. London, 1850. (From the Author.)

A Treatise on the Pathology, Diagnosis, and Treatment of Neuroma. By ROBERT W. SMITH, M. D., T. C. D., M. R. I. A., &c. &c. Dublin, Hodges & Smith, 1849. (From the Author.)

Essays on the Puerperal Fever, and other Diseases peculiar to Women. Selected from the writings of British Authors previous to the close of the eighteenth century. Edited by FLEETWOOD CHURCHILL, M. D., M. R. I. A., &c. &c. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

A Practical Treatise on Inflammation of the Uterus and its Appendages, and on Ulceration and Induration of the Neck of the Uterus. By JAMES HENRY BENNETT, M. D., M. R. C. P., &c. &c. Second American, from the second London edition. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

Medical Jurisprudence. By ALFRED TAYLOR, F. R. S. Second American from the third London edition. With Notes and Additions by R. EGLESFELD GRIFFITH, M. D., &c. Philadelphia, Lea & Blanchard, 1850.

A Systematic Treatise, Historical, Etiological, and Practical, on the Principal Diseases of the Interior Valley of North America, as they appear in the Caucasian, African, Indian, and Esquimaux Varieties of its Population. By DANIEL DRAKE, M. D. Cincinnati, 1850. (From the Author.)

The American Medical Formulary: based upon the United States and British Pharmacopœias. Including, also, numerous standard Formulæ derived from American and European authorities; together with the Medical Properties and Uses of Medicines: Poisons, their Antidotes, Tests, &c., designed for the Medical and Pharmaceutical Student. By JOHN J. REESE, M. D., Lecturer on Mat. Med. and Therap. in Philadelphia Medical Institute. Philadelphia, Lindsay & Blakiston, 1850. (From the Publishers.)

The Druggist's General Receipt Book: containing numerous Recipes for Patent and Proprietary Medicines, Druggists' Nostrums, &c.; Factitious Mineral Waters, and Powders for preparing them; with a Veterinary Formulary, and Tables of Veterinary Materia Medica; also, Recipes for Perfumery and Cosmetics, Beverages, Dietetic Articles and Condiments, Trade Chemicals, Miscellaneous Compounds used in the Arts, Domestic Economy, &c., with useful Tables and Memoranda. By HENRY BEASLEY. Philadelphia, Lindsay & Blakiston, 1850. (From the Publishers.)

The Life and Correspondence of Andrew Combe, M. D., F. R. C. P. Ed., &c. &c. By GEORGE COMBE. Philadelphia, A. Hart, 1850. (From the Publisher.)

Transactions of the Medical Society of the State of New York, during its Annual Session, held at Albany, February 5th, 1850. Albany, 1850. (From Dr. Beck.)

The New Jersey Medical Reporter, and Transactions of the New Jersey Medical Society. Edited by JOSEPH PARRISH, M. D. April, 1850.

Journal of the Proceedings of the Michigan Medical Association for the years 1849, 1850, Vol. I. Jackson, 1850.

Transactions of the Medical and Physical Society of Bombay, Nos. VIII. and IX. Bombay, 1846-7-8. (From the Society.)

Account of an Operation for the Removal of an Ovarian Tumour. By ALDEN MARCH, M. D. (From the Author.)

Remarks on the Comparative Value of the different Anæsthetic Agents. By GEO. HAYWARD, M. D. Boston, 1850. (From the Author.)

Southern Medical Reports; consisting of General and Special Reports on the Medical Topography, Meteorology, and Prevalent Diseases in the following States—Louisiana, Alabama, Mississippi, North Carolina, South Carolina, Georgia, Florida, Arkansas, Tennessee, Texas. To be published annually. Edited by E. D. FENNER, M. D., of New Orleans. New Orleans and New York, 1850. (From the Author.)

Eleventh Annual Report of the Directors and Superintendents of the Ohio Lunatic Asylum to the forty-eighth General Assembly of the State of Ohio, for the year 1849. Columbus, 1850. (From Dr. Awl.)

The Annual Report of the Board of Health of the city of New Orleans for 1849. New Orleans, 1850. (From Dr. E. H. BARTON.)

Annual Report of the Directors and Warden of the Ohio Penitentiary to the forty-eighth General Assembly of the State of Ohio for the year 1849. Columbus, 1850. (From Wm. Trevitt, M. D., Physician to the Institution.)

Third Annual Report of the Regents of the University of the Condition of the State Cabinet of Natural History and the Historical and Antiquarian Collection annexed thereto. Made to the Senate, January 11, 1850. Albany, 1850. (From the Regents.)

Annual Report of the Physician of the Marine Hospital, made to the Legislature March 26th, 1850. Albany, 1850. (From Dr. F. C. Stewart.)

The Twenty-first Annual Report of the Inspectors of the Eastern State Penitentiary of Pennsylvania. Philadelphia, 1850. (From Dr. Given.)

Report of the Select Committee of the Legislature of 1849 on the Publication of the Natural History of the State of New York. Made to the Legislature, January 2, 1850. Albany, 1850. (From Dr. T. R. Beck.)

Eighteenth Annual Report of the Trustees of the Perkins Institution and Massachusetts Asylum for the Blind to the Corporation. Cambridge, 1850. (From Dr. E. Jarvis.)

Physic and the Physicians. The Annual Address delivered before the Alabama State Medical Association, at the Capitol, December 10th, 1849. By Wm. O. BALDWIN, M. D. Printed by order of the Association. Montgomery, 1850. (From the Author.)

Anniversary Oration before the New York Academy of Medicine, delivered in the Chapel of the University of the City of New York, November 11th, 1849. By ALFRED C. POST, M. D. Published by order of the Academy. New York, 1849.

A Valedictory Address to the Graduates of the University of Pennsylvania, delivered April 6th, 1850. By HUGH L. HODGE, M. D., Professor of Obstetrics, &c. Philadelphia, 1850.

Annual Address delivered before the New York State Medical Society, and Members of the Legislature, at the Capitol, February 6, 1850. By ALEX. H. STEVENS, M. D., President of the Society. (From the Author.)

Medicine a Science and an Art. A Lecture introductory to the Course in the Medical Institution of Geneva College. By C. B. COVENTRY, M. D., Professor of Obstetrics, &c. Published by the Class. Geneva, 1850.

Valedictory Address to the Graduating Class of the Medical Department of Transylvania University, at the Commencement, March 1, 1850. By Wm. M. BOLING, M. D., Prof. of Obstetrics, 1850.

Address delivered before the Class of the Baltimore College of Dental Surgery at the conclusion of the last lecture of the Course for the Session 1849-50.

By Chap. A. A. HARRIS, M. D., Prof. of Principles and Practice of Dental Surgery. Baltimore, 1850.

An Address delivered before the Suffolk District Medical Society, at its first Anniversary Meeting, Boston, April 27, 1850. By JOHN JEFFRIES, M. D., President of the Society. Boston, 1850. (From the Author.)

Opening Address delivered before the Society of the Alumni of the Baltimore College of Dental Surgery, at the second annual meeting, March 26th, 1850. By E. TOWNSEND, D. D. Published by request of the Society. Baltimore, 1850. (From the Author.)

Annual Announcement of the Medical Department of the St. Louis University—session 1850–51. St. Louis, 1850.

Catalogue of the Trustees, Officers, and Students of the University of Pennsylvania, session 1849–50. Philadelphia, 1850.

Primary Announcement of the Course of Lectures in the Medical Department in the University of Michigan, session 1850–51. Ann Arbor, Michigan, 1850.

Report of the Committee of Internal Health on the Asiatic Cholera, together with a Report of the City Physician of the Cholera Hospital. Boston, 1849. (From Dr. H. G. Clark.)

Ship Fever, so called; its History, Nature, and best Treatment. The Fish Fund Prize Dissertation for 1849. By H. G. CLARK, M. D., &c. Boston, 1850. (From the Author.)

An Historical Sketch of the State of Medicine in the American Colonies from their settlement to the period of the Revolution. By JOHN B. BECK, M. D., Prof. of Materia Medica and Medical Jurisprudence in the College of Physicians and Surgeons of the city of New York. Second edition. Albany, 1850. (From the Author.)

Letter of Gail Borden, Jr., to Dr. Ashbel Smith, setting forth an important invention in the preparation of a new article of food, termed meal-biscuit; and the reply of Dr. Smith thereto: being a letter addressed to the American Association for the Promotion of Science, at their semi-annual meeting, to be held at Charleston, in March next. Galveston, 1850. (From Dr. Smith.)

An Essay on the Opium Trade, including a Sketch of its History, Extent, Effects, &c., as carried on in India and China. By NATHAN ALLEN, M. D. Boston, 1850. (From the Author.)

The following journals have been received in exchange:—

Revue Medicale Francaise et étrangère. Par J. B. CAYOL. May, June, July, Aug., Sept., Oct., Nov., Dec., 1849.

Annales Medico-Psychologiques. Journal destine a recueillir tous les documents relatifs a l'aliénation mentale, aux névroses et a la médecine légale des aliénés. Par MM. LES DOCTEURS BAILLARGER et CERISE. July, Oct., 1849.

Gazette Médicale de Paris. Aug., Sept., Oct., Nov., Dec., 1849, Jan., 1850.

Journal des Connaissances Medico-Chirurgicales. Publié par LE DOCTEUR A. MARTIN LAUZER. Aug., Sept., Oct., Nov., Dec., 1849, Jan., 1850.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. Aug., Sept., 1849.

The London Medical Gazette. March, April, May, 1850.

The British and Foreign Medico-Chirurgical Review. April, 1850.

Monthly Journal of Medical Science, conducted by Dr. S. R. CHRISTISON, J. Y. SIMPSON, J. H. BENNETT, D. MACLAGAN, and WM. ROBERTSON, and J. SYME and J. GOODSIR, Esqrs. April, May, June, 1850.

London Journal of Medicine, a Monthly Record of the Medical Sciences. April, May, June, 1850.

The Edinburgh Medical and Surgical Journal, April, 1850.

The Journal of Psychological Medicine and Mental Pathology. Edited by FORBES WINSLOW, M. D. April, 1850.

Provincial Medical and Surgical Journal. Edited by W. H. RANKING, M. D., and J. H. WALSH, Esq. March, April, May, 1850.

Medical Times. March, April, May, 1850.

Dublin Medical Press. March, April, May, 1850.

The Dublin Quarterly Journal of Medical Science. May, 1850.

British American Journal of Medical and Physical Science. Edited by A. HALL, M. D. April, May, 1850.

The North-Western Medical and Surgical Journal. Edited by JOHN EVANS, M. D., and EDWIN G. MEEK, M. D., March, May, 1850.

Southern Medical and Surgical Journal. Edited by J. P. GARVIN, M. D. April, May, June, 1850.

The Medical Examiner. Edited by F. G. SMITH, M. D. April, May, June, 1850.

Buffalo Medical Journal and Monthly Review of Med. and Surg. Science, &c. Edited by AUSTIN FLINT, M. D. April, May, June, 1850.

The Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M. D., and T. S. BELL, M. D. April, May, 1850.

The American Journal of Pharmacy, published by authority of the Philadelphia College of Pharmacy. Edited by JOS. CARSON, M. D., and WM. PROCTOR, Jr., Profs. in Philad. Coll. of Pharmacy. April, 1850.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M. D. March, May, 1850.

The Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. April, May, June, 1850.

Northern Lancet and Gazette of Legal Medicine. Edited by Drs. F. J. D. AVIGNON, and H. NELSON.

The Western Lancet and Hospital Reporter. Edited by L. M. LAWSON, M. D. April, May, 1850.

Transylvania Medical Journal. Edited by E. D. DUDLEY, M. D. April, 1850.

St. Louis Medical and Surgical Journal. Edited by Drs. LINTON, MOORE, MCPHEETERS and JOHNSON. March and April, 1850.

The New York Journal of Medicine and the Collateral Sciences. Edited by J. S. PURPLE, M. D. May, 1850.

The Ohio Medical and Surgical Journal. Edited by S. HANBURY SMITH, M. D. May, June, 1850.


The American Journal of Science and the Arts. Conducted by Profs. B. SILLIMAN, and B. SILLIMAN, Jr., and JAMES D. DANA. May, 1850.

The American Journal of Insanity. Edited by the officers of the New York State Lunatic Asylum, Utica. April, 1850.

The Charleston Medical Journal and Review. Edited by D. J. CAIN, M. D., and T. P. PORCHER, M. D. May, 1850.

Communications intended for publication, and Books for Review, should be sent, *free of expense*, directed to ISAAC HAYS, M. D., Editor of the American Journal of the Medical Sciences, care of Messrs. Lea & Blanchard, Philadelphia. Parcels directed as above, and sent (carriage paid) under cover, to John Miller, Henrietta Street, Covent Garden, *London*; or to John Wiley, or G. P. Putnam, *New York*; or W. D. Ticknor, *Boston*; or M. Hector Bossange, Lib. quai Voltaire, No. 11, *Paris*, will reach us safely and without delay. We particularly request the attention of our foreign correspondents to the above, as we are often subjected to unnecessary expense for postage and carriage.

All remittances of money, and letters on the *business* of the Journal, should be addressed *exclusively* to the publishers, Messrs. Lea & Blanchard.

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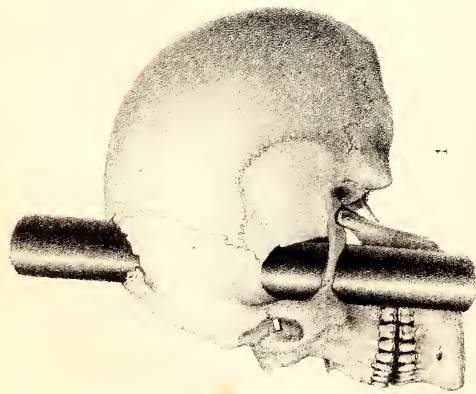
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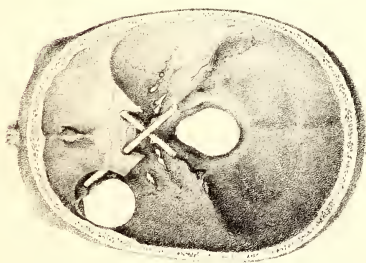
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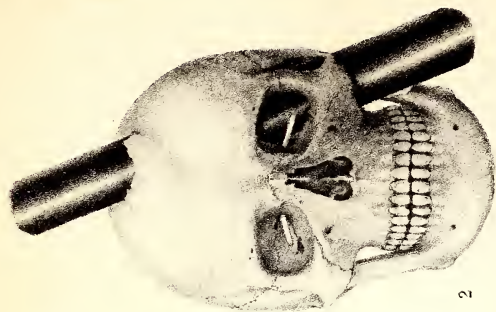
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THE
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ART. I.—*Dr. Harlow's Case of Recovery from the passage of an Iron Bar through the Head.* By HENRY J. BIGELOW, M. D., Professor of Surgery in Harvard University. (With a plate.)

THE following case, perhaps unparalleled in the annals of surgery, and of which some interesting details have already been published, occurred in the practice of Dr. J. M. Harlow, of Cavendish, Vermont. Having received a verbal account of the accident, a few days after its occurrence, from a medical gentleman who had examined the patient, I thus became incidentally interested in it; and having since had an opportunity, through the politeness of Dr. Harlow, of observing the patient, who remained in Boston a number of weeks under my charge, I have been able to satisfy myself as well of the occurrence and extent of the injury as of the manner of its infliction. I am also indebted to the same gentleman for procuring at my request the testimony of a number of persons who were cognizant of the accident or its sequel.

Those who are skeptical in admitting the co-existence of a lesion so grave, with an inconsiderable disturbance of function, will be interested in further details connected with the case; while it is due to science that a more complete record should be made of the history of so remarkable an injury.

The accident occurred upon the line of the Rutland and Burlington Railroad, on the 13th of September, 1848. The subject of it, Phineas P. Gage, is of middle stature, twenty-five years of age, shrewd and intelligent. According to his own statement, he was charging with powder a hole drilled in a rock, for the purpose of blasting. It appears that it is customary in filling the hole to cover the powder with sand. In this case, the charge having been adjusted, Mr. Gage directed his assistant to pour in the sand; and at the interval of a few seconds, his head being averted, and supposing the sand to have been properly placed, he dropped the head of the iron as usual upon the

charge, to consolidate or "*tamp it in.*" The assistant had failed to obey the order, and the iron striking fire upon the rock, the uncovered powder was ignited and the explosion took place. Mr. Gage was at this time standing above the hole, leaning forward, with his face slightly averted; and the bar of iron was projected directly upwards in a line of its axis, passing completely through his head and high into the air. The wound thus received, and which is more fully described in the sequel, was oblique, traversing the cranium in a straight line from the angle of the lower jaw on one side to the centre of the frontal bone above, near the sagittal suture, where the missile emerged; and the iron thus forcibly thrown into the air was picked up at a distance of some rods from the patient, smeared with brains and blood.

From this extraordinary lesion, the patient has quite recovered in his faculties of body and mind, with the loss only of the sight of the injured eye.

The iron which thus traversed the skull weighs thirteen and a quarter pounds. It is three feet seven inches in length, and one and a quarter inches in diameter. The end which entered first is pointed; the taper being seven inches long, and the diameter of the point one quarter of an inch; circumstances to which the patient perhaps owes his life. The iron is unlike any other, and was made by a neighbouring blacksmith to please the fancy of the owner.

Dr. Harlow, in the graphic account above alluded to, states that "immediately after the explosion the patient was thrown upon his back, and gave a few convulsive motions of the extremities, but spoke in a few minutes. His men (with whom he was a great favourite) took him in their arms and carried him to the road, only a few rods distant, and sat him into an ox cart, in which he rode, sitting erect, full three quarters of a mile, to the hotel of Mr. Joseph Adams, in this village. He got out of the cart himself, and with a little assistance walked up a long flight of stairs, into the hall, where he was dressed."

Mr. Joseph Adams, here spoken of, has furnished the following interesting statement:—

This is to certify that P. P. Gage had boarded in my house for several weeks previous to his being injured upon the railroad, and that I saw him and conversed with him soon after the accident, and am of opinion that he was perfectly conscious of what was passing around him. He rode to the house, three-quarters of a mile, sitting in a cart, and walked from the cart into the piazza, and thence up stairs, with but little assistance. I noticed the state of the left eye, and know, from experiment, that he could see with it for several days, though not distinctly. In regard to the elevated appearance of the wound, and the introduction of the finger into it, I can fully confirm the certificate of my nephew, Washington Adams, and others, and would add that I repeatedly saw him eject matter from the mouth similar in appearance to that discharged from the head. The morning subsequent to the accident I went in quest of the bar, and found it at a smith's shop, near the pit in which he was engaged.

The men in his pit asserted that "they found the iron, covered with blood

and brains," several rods behind where Mr. Gage stood, and that they washed it in the brook, and returned it with the other tools; which representation was fully corroborated by the greasy feel and look of the iron, and the *fragments of brain* which I saw upon the rock where it fell.

(Signed)

JOSEPH ADAMS,

Justice of the Peace.

CAVENDISH, Dec. 14, 1849.

The Rev. Joseph Freeman, whose letter follows, informed himself of the circumstances soon after the accident.

CAVENDISH, Dec. 5, 1849.

DEAR SIR—I was at home on the day Mr. Gage was hurt; and seeing an Irishman ride rapidly up to your door, I stepped over to ascertain the cause, and then went immediately to meet those who I was informed were bringing him to our village.

I found him in a cart, sitting up without aid, with his back against the fore-board. When we reached his quarters, he rose to his feet without aid, and walked quick, though with an unsteady step, to the hind end of the cart, when two of his men came forward and aided him out, and walked with him, supporting him to the house.

I then asked his men how he came to be hurt? The reply was, "The blast went off when he was tamping it, and the tamping-iron passed through his head." I said, "That is impossible."

Soon after this, I went to the place where the accident happened. I found upon the rocks, where I supposed he had fallen, a small quantity of brains. There being no person at this place, I passed on to a blacksmith's shop a few rods beyond, in and about which a number of Irishmen were collected. As I came up to them, they pointed me to the iron, which has since attracted so much attention, standing outside the shop-door. They said they found it covered with brains and dirt, and had washed it in the brook. The *appearance* of the iron corresponded with this story. It had a greasy appearance, and was so to the touch.

After hearing their statement, as there was no assignable motive for misrepresentation, and finding the appearance of the iron to agree with it, I was compelled to believe, though the result of your examination of the wound was not then known to me.

I think of nothing further relating to this affair which cannot be more minutely stated by others.

Very respectfully, yours,

(Signed)

JOSEPH FREEMAN.

Dr. J. M. HARLOW.

Dr. WILLIAMS first saw the patient, and makes the following statement in relation to the circumstances :—

NORTHFIELD, Vermont, Dec. 4, 1849.

Dr. BIGELOW: Dear Sir—Dr. Harlow having requested me to transmit to you a description of the appearance of Mr. Gage at the time I first saw him after the accident, which happened to him in September, 1848, I now hasten to do so with pleasure.

Dr. Harlow being absent at the time of the accident, I was sent for, and was

the first physician who saw Mr. G., some twenty-five or thirty minutes after he received the injury; he at that time was sitting in a chair upon the piazza of Mr. Adams's hotel, in Cavendish. When I drove up, he said, "Doctor, here is business enough for you." I first noticed the wound upon the head before I alighted from my carriage, the pulsations of the brain being very distinct; there was also an appearance which, before I examined the head, I could not account for: the top of the head appeared somewhat like an inverted funnel; this was owing, I discovered, to the bone being fractured about the opening for a distance of about two inches in every direction. I ought to have mentioned above that the opening through the skull and integuments was not far from one and a half inch in diameter; the edges of this opening were everted, and the whole wound appeared as if some wedge-shaped body had passed from below upward. Mr. Gage, during the time I was examining this wound, was relating the manner in which he was injured to the bystanders; he talked so rationally and was so willing to answer questions, that I directed my inquiries to him in preference to the men who were with him at the time of the accident, and who were standing about at this time. Mr. G. then related to me some of the circumstances, as he has since done; and I can safely say that neither at that time nor on any subsequent occasion, save once, did I consider him to be other than perfectly rational. The one time to which I allude was about a fortnight after the accident, and then he persisted in calling me John Kirwin; yet he answered all my questions correctly.

I did not believe Mr. Gage's statement at that time, but thought he was deceived; I asked him where the bar entered, and he pointed to the wound on his cheek, which I had not before discovered; this was a slit running from the angle of the jaw forward about one and a half inch; it was very much stretched laterally, and was discoloured by powder and iron rust, or at least appeared so. Mr. Gage persisted in saying that the bar went through his head: an Irishman standing by said, "Sure it was so, sir, for the bar is lying in the road below, all blood and brains." The man also said he would have brought it up with him, but he thought there would be an inquest, and it would not do.

About this time, Mr. G. got up and vomited a large quantity of blood, together with some of his food; the effort of vomiting pressed out about half a teacupful of the brain, which fell upon the floor, together with the blood, which was forced out at the same time. The left eye appeared more dull and glassy than the right. Mr. G. said he could merely distinguish light with it.

Soon after Dr. Harlow arrived, Mr. Gage walked up stairs, with little or no assistance, and laid down upon a bed, when Dr. H. made a thorough examination of the wounds, passing the whole length of his forefinger into the superior opening without difficulty; and my impression is that he did the same with the inferior one, but of that I am not absolutely certain: after this we proceeded to dress the wounds in the manner described by Dr. H. in the Journal. During the time occupied in dressing, Mr. G. vomited two or three times fully as freely as before. All of this time Mr. G. was perfectly conscious, answering all questions, and calling his friends by name as they came into the room.

I did not see the bar that night, but saw it the next day after it was washed. Hoping you will excuse this hasty sketch, I remain yours, &c.

(Signed) EDWARD H. WILLIAMS, M. D.

Dr. Harlow's account of his first visit to the patient, and of the subsequent symptoms, is here appended.

"Being absent, I did not arrive at the scene of the accident until near 6 o'clock, P. M. You will excuse me for remarking here that the picture presented was, to one unaccustomed to military surgery, truly terrific; but the patient bore his sufferings with the most heroic firmness. He recognized me at once, and said he hoped he was not much hurt. He seemed to be perfectly conscious, but was getting exhausted from the hemorrhage, which was very profuse both externally and internally, the blood finding its way into the stomach, which rejected it as often as every fifteen or twenty minutes. Pulse 60, and regular. His person and the bed on which he was laid were literally one gore of blood. Assisted by my friend, Dr. Williams, of Proctorsville, who was first called to the patient, we proceeded to dress the wounds. From their appearance, the fragments of bone being uplifted and the brain protruding, it was evident that the fracture was occasioned by some force acting from below upward. The scalp was shaven, the coagula removed, together with three small triangular pieces of the cranium, and in searching to ascertain if there were other foreign bodies there, I passed in the index finger its whole length, without the least resistance, in the direction of the wound in the cheek, which received the other finger in like manner. A portion of the anterior superior angle of each parietal bone, and a semicircular piece of the frontal bone, were fractured, leaving a circular opening of about three and a half inches in diameter. This examination, and the appearance of the iron which was found some rods distant, smeared with brain, together with the testimony of the workmen, and of the patient himself, who was still sufficiently conscious to say that 'the iron struck his head and passed through,' was considered at the time sufficiently conclusive to show not only the nature of the accident, but the manner in which it occurred.

"I have been asked why I did not pass a probe through the entire extent of the wound at the time. I think no surgeon of discretion would have upheld me in the trial of such a foolhardy experiment, in the risk of disturbing lacerated vessels, from which the hemorrhage was near being staunched, and thereby rupturing the attenuated thread, by which the sufferer still held to life. You will excuse me for being thus particular, inasmuch as I am aware that the nature of the injury has been seriously questioned by many medical men for whom I entertain a very high respect.

"The spiculæ of bone having been taken away, a portion of the brain, which hung by a pedicle, was removed, the larger pieces of bone replaced, the lacerated scalp was brought together as nearly as possible, and retained by adhesive straps, excepting at the posterior angle, and over this a simple dressing—compress, nightcap and roller. The wound in the face was left patulous, covered only by a simple dressing. The hands and forearms were both deeply burned nearly to the elbows, which were dressed, and the patient was left with the head elevated, and the attendants requested to keep him in that position.

"10 P. M., same evening. The dressings are saturated with blood, but the hemorrhage appears to be abating. Has vomited twice only since being dressed. Sensorial powers remain as yet unimpaired. Says he does not wish to see his friends, as he shall be at work in a day or two. Tells where they live, their names, &c. Pulse 65; constant agitation of the lower extremities.

"14th, 7 A. M. Has slept some; appears to be in pain; speaks with difficulty; tumefaction of face considerable, and increasing; pulse 70; knows his friends, and is rational. Asks who is foreman in his pit. Hemorrhage internally continues slightly. Has not vomited since 12 P. M.

"15th, 9 A. M. Has slept well half the night. Sees objects indistinctly with the left eye, when the lids are separated. Hemorrhage has ceased. Pulse 75. 8 P. M., Restless and delirious; talks much, but disconnected and incoherent. Pulse 84, and full. Prescribed *vin. colchicum*, fʒss every six hours, until it purges him. Removed the night-cap.

"16th, 8 A. M. Patient appears more quiet. Pulse 70. Dressed the wounds, which in the head have a fetid sero-purulent discharge, with particles of brain intermingled. No discharge from bowels. Ordered *sulph. magnesia*, ʒj, repeated every four hours until it operates. Iced water to the head and eye. A fungus appears at the external canthus of the left eye. Says 'the left side of his head is banked up.'

"17th, 8 A. M. Pulse 84. Purged freely. Rational, and knows his friends. Discharge from the brain profuse, very fetid and sanious. Wounds in face healing.

"18th, 9 A. M. Slept well all night, and lies upon his right side. Pulse 72; tongue red and dry; breath fetid. Removed the dressings, and passed a probe to the base of the cranium, without giving pain. Ordered a cathartic, which operated freely. Cold to the head. Patient says he shall recover. He is delirious, with lucid intervals.

"19th, 8 P. M. Has been very restless during the day; skin hot and dry; tongue red; excessive thirst; delirious, talking incoherently with himself, and directing his men.

"20th and 21st. Has remained much the same.

"22d, 8 A. M. Patient has had a very restless night. Throws his hands and feet about, and tries to get out of bed. Head hot. Says 'he shall not live long so.' Ordered a cathartic of calomel and rhubarb, to be followed by castor oil, if it does not operate in six hours. 4 P. M. Purged freely twice, and inclines to sleep.

"23d. Rested well most of the night, and appears stronger and more rational. Pulse 80. Shaved the scalp a second time, and brought the edges of the wound in position, the previous edges having sloughed away. Discharge less in quantity and less fetid. Loss of vision of left eye.

"From this time until the 3d of October, he lay in a semi-comatose state, seldom speaking unless spoken to, and then answering only in monosyllables. During this period, fungi started from the brain, and increased rapidly from the orbit. To these was applied nitrate of silver cryst., and cold to the head generally. The dressings were renewed three times in every twenty-four hours; and in addition to this, laxatives, combined with an occasional dose of calomel, constituted the treatment. The pulse varied from 70 to 96—generally very soft. During this time an abscess formed under the frontalis muscle, which was opened on the 27th, and has been very difficult to heal. Discharged nearly ʒviij at the time it was punctured.

"Oct. 5th and 6th. Patient improving. Discharge from the wound and sinus, laudable pus. Calls for his pants, and wishes to get out of bed, though he is unable to raise his head from the pillow.

"7th. Has succeeded in raising himself up, and took one step to his chair, and sat about five minutes.

"11th. Pulse 72. Intellectual faculties brightening. When I asked him how long since he was injured, he replied, 'four weeks this afternoon, at half past four o'clock.' Relates the manner in which it occurred, and how he came to the house. He keeps the day of the week and time of day in his mind. Says he knows more than half of those who inquire after him. Does

not estimate size or money accurately, though he has memory as perfect as ever. He would not take one thousand dollars for a few pebbles which he took from an ancient river bed where he was at work. The fungus is giving way under the use of the cryst. nitrate of silver. During all of this time there has been a discharge of pus into the fauces, a part of which passed into the stomach, the remainder being ejected from the mouth.

"20th. Improving. Gets out and into bed with but little assistance. Sits up thirty minutes twice in twenty-four hours. Is very childish; wishes to go home to Lebanon, N. H. The wound in the scalp is healing rapidly.

"Nov. 8th. Improving in every particular, and sits up most of the time during the day. Appetite good, though he is still kept upon a low diet. Pulse 65. Sleeps well, and says he has no pain in the head. Food digests easily, bowels regular, and nutrition is going on well. The sinus under the frontalis muscle has nearly healed. He walks up and down stairs, and about the house, into the piazza, and I am informed this evening that he has been in the street to-day.—I leave him for a week, with strict injunctions to avoid excitement and exposure.

"15th. I learn, on inquiry, that Gage has been in the street every day except Sunday, during my absence. His desire to be out and to go home to Lebanon has been uncontrollable by his friends, and he has been making arrangements to that effect. Yesterday he walked half a mile, and purchased some small articles at the store. The atmosphere was cold and damp, the ground wet, and he went without an overcoat, and with thin boots. He got wet feet and a chill. I find him in bed, depressed and very irritable. Hot and dry skin; thirst, tongue coated; pulse 110: lancinating pain in left side of head and face; rigors, and bowels constipated. Ordered cold to the head and face, and a black dose to be repeated in six hours, if it does not operate. He has had spiculæ of bone pass into the fauces, which he expelled from the mouth within a few days.

"16th, A. M. No better. Cathartic has operated freely. Pulse 120; skin hot and dry; thirst and pain remain the same. Has been very restless during the night. Venesection f3xvj. Ordered calomel, gr. x, and ipecac. gr. ij, followed in four hours by castor oil.

"8 P. M., same day. Purged freely; pulse less frequent; pain in head moderated; skin moist. R. Antim. et potassa tart., gr. iij; syr. simplex, f3vj. Dose a dessertspoonful every four hours.

"17th. Improving. Expresses himself as 'feeling better in every respect;' has no pain in the head.

"18th. Is walking about the house again; says he feels no pain in the head, and appears to be in a way of recovering if he can be controlled."

Remarks.—The leading feature of this case is its improbability. A physician who holds in his hand a crowbar, three feet and a half long, and more than thirteen pounds in weight, will not readily believe that it has been driven with a crash through the brain of a man who is still able to walk off, talking with composure and equanimity of the hole in his head. This is the sort of accident that happens in the pantomime at the theatre, but not elsewhere. Yet there is every reason for supposing it in this case literally true. Being at first wholly skeptical, I have been personally convinced; and this has been the experience of many medical gentlemen who, having first heard of the circumstances, have had a subsequent opportunity to examine the evidence.

This evidence is comprised in the testimony of individuals, and in the anatomical and physiological character of the lesion itself.

The above accounts from different individuals, concur in assigning to the accident a common cause. They are selected as the most complete among about a dozen of similar documents forwarded to me by Dr. Harlow, who was kind enough to procure them at my request; and which bear the signature of many respectable persons in and about the town of Cavendish, and all corroborative of the circumstances as here detailed. The accident occurred in open day, in a quarry in which a considerable number of men were at work, many of whom were witnesses of it, and all of whom were attracted by it. Suffice it to say, that in a thickly populated country neighbourhood, to which all the facts were matter of daily discussion at the time of their occurrence, there is no difference of belief, nor has there been at any time doubt that the iron was actually driven through the brain. A considerable number of medical gentlemen also visited the case at various times to satisfy their incredulity.

Assuming the point that the wound was the result of a missile projected from below upwards, it may be asked whether the wound might not have been made by a stone, while the bar was at the same moment thrown into the air. It may be replied in answer, that the rock was not split, nor, as far as could be learned, disintegrated. Besides, an angular bit of stone would have been likely to have produced quite as much laceration as the bar of iron; and it is in fact possible that the tapering point of the latter divided and repelled the soft parts, especially the brain, in a way that enabled the smooth surface of the iron to glide through with less injury. And assuming the only possible hypothesis, that the round bar followed exactly the direction of its axis, the missile may be considered as a sphere of one and a quarter inches diameter, preceded by a conical and polished wedge.

The patient visited Boston in January, 1850, and remained some time under my observation, during which he was presented at a meeting of the Boston Society for Medical Improvement, and also to the medical class at the hospital. His head, now perfectly healed, exhibits the following appearances.

A linear cicatrix of an inch in length occupies the left ramus of the jaw near its angle. A little thickening of the soft tissues is discovered about the corresponding malar bone. The eyelid of this side is shut, and the patient unable to open it. The eye considerably more prominent than the other, offers a singular confirmation of the points illustrated by the prepared skull described below. It will be there seen that the parts of the orbit necessarily cut away are those occupied by the levator palpebræ superioris, the levator oculi, and the abducens muscles. In addition to a ptosis of the lid, the eye is found to be incapable of executing either the outward or upward motion; while the other muscles animated by the motor communis are unimpaired. Upon the head, and covered by hair, is a large unequal depression and elevation. A portrait of the cast of the shaved head is given in the plate; and it

will be there seen that a piece of cranium of about the size of the palm of the hand, its posterior border lying near the coronal suture, its anterior edge low upon the forehead, was raised upon the latter as a hinge to allow the egress of the bar; and that it still remains raised and prominent. Behind it is an irregular and deep sulcus several inches in length, beneath which the pulsations of the brain can be perceived.

In order to ascertain how far it might be possible for this bar of an inch and a quarter diameter to traverse the skull in the track assigned to it, I procured a common skull, in which the zygomatic arches are barely visible from above; and having entered a drill near the left angle of the lower jaw, passed it obliquely upwards to the median line of the cranium just in front of the junction of the sagittal and coronal sutures. This aperture was then enlarged until it allowed the passage of the bar in question, and the loss of substance strikingly corresponds with the lesion said to have been received by the patient. From the coronoid process of the lower jaw is removed a fragment measuring about three-quarters of an inch in length. This fragment in the patient's case might have been fractured and subsequently reunited.

The hole now enters obliquely beneath the zygomatic arch, encroaching equally upon all its walls. In fact, it entirely occupies this cavity; the posterior wall of the antrum being partially excavated at the front of the hole, the whole orbital portion of the sphenoid bone being removed behind, as also the anterior part of the squamous portion of the temporal bone, and the internal surface of the zygoma and malar bone laterally. In the orbit, the sphenoid bone, part of the superior maxillary below, and a large part of the frontal above, are cut away, and with these fragments much of the speno-maxillary fissure; leaving, however, the optic foramen intact about a quarter of an inch to the inside of the track of the bar.

The base of the skull upon the inside of the cranium presents a cylindrical hole of an inch and a quarter diameter, and such as may be described by a pair of compasses, one leg of which is placed upon the lesser wing of the sphenoid bone at an eighth of an inch from its extremity, cutting the frontal, temporal and sphenoid bones; the other, half an inch outside the internal optic foramen.

The calvaria is traversed by a hole, two-thirds of which is upon the left, and one-third upon the right of the median line, its posterior border being quite near the coronal suture. The iron freely traverses the oblique hole thus described.

It is obvious that a considerable portion of the brain must have been carried away; that while a portion of its lateral substance may have remained intact, the whole central part of the left anterior lobe, and the front of the sphenoidal or middle lobe must have been lacerated and destroyed. This loss of substance would also lay open the anterior extremity of the left lateral ventricle; and the iron, in emerging from above must have largely impinged upon the right cerebral lobe, lacerating the falx and the longitudinal sinus.

Yet the optic nerve remained unbroken in the narrow interval between the iron and the inner wall of the orbit. The eye, forcibly thrust forward at the moment of the passage, might have again receded into its socket, from which it was again somewhat protruded during the subsequent inflammation.

It is fair to suppose that the polished conical extremity of the iron which first entered the cavity of the cranium prepared the passage for the thick cylindrical bar which followed; and that the point, in reaching and largely breaking open the vault of the cranium, afforded an ample egress for the cerebral substance, thus preventing compression of the remainder.

Yet it is difficult to admit that the aperture could have been thus violently forced through without a certain comminution of the base of the cranium driven inwards upon the cerebral cavity.

Little need be said of the physiological possibility of this history. It is well known that a considerable portion of the brain has been in some cases abstracted without impairing its functions. Atrophy of an entire cerebral hemisphere has also been recorded.

But the remarkable features of the present case lie not only in the loss of cerebral substance, but also in the singular chance which exempted the brain from either concussion or compression; which guided the enormous missile exactly in the direction of its axis, and which averted the dangers of subsequent inflammation. An entire lung is often disabled by disease; but I believe there is no parallel to the case in the Hunterian collection of a lung and thorax violently transfixed by the shaft of a carriage.

Taking all the circumstances into consideration, it may be doubted whether the present is not the most remarkable history of injury to the brain which has been recorded.*

REFERENCE TO PLATE.

1. Lateral view of a prepared cranium, representing the iron bar in the act of traversing its cavity.

2. Front view of ditto.

3. Plan of the base seen from within. (In these three figures the optic foramina are seen to be intact, and occupied by small white rods. In the first two figures, no attempt has been made to represent the elevation of the large anterior fragment, which must have been more considerable than is here shown.)

4. Cast taken from the shaved head of the patient, and representing the present appearance of the fracture; the anterior fragment being considerably elevated in the profile view.

5. The iron bar of the length and diameter proportioned to the size of the other figures.

* The iron bar has been deposited in the museum of the Massachusetts Medical College, where it may be seen, together with a cast of the patient's head.

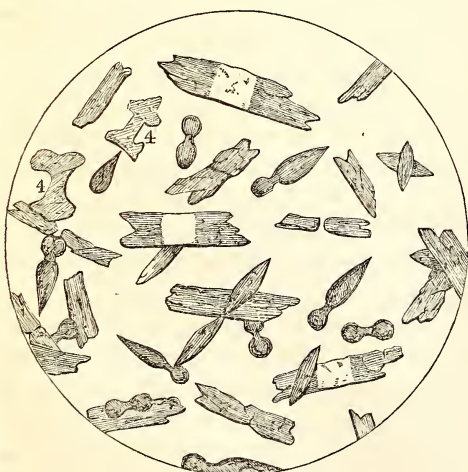
ART. II.—*Remarks on the Relation of the Dumb-Bell Crystals to Uric Acid.*

By CHARLES FRICK, M. D., of Baltimore, Maryland. [With a wood-cut.]

THE pathology of oxalate of lime, and its relation to uric acid, are now so clearly understood, and so universally recognized, that it is needless at this time to enter into a particular explanation in regard to its formation; and we shall, therefore, take it for granted that, in ascribing its presence in the urine to deficient oxidation of the uric acid, we are assuming the correct explanation. Under the microscope, the most common form that this salt presents when it exists as a urinary deposit, is that of double pyramids united at their bases, or, as they are usually termed, octahedra; and these at first were the only recognized crystals of oxalate of lime. Dr. Golding Bird, however, in his work on "Urinary Deposits," first called attention to some peculiar crystalline bodies having more or less the appearance of dumb-bells, which he described as oxalate of lime, and which all observers subsequent to him have included under the same head. For many reasons, we were led to doubt the correctness of this opinion; and having had, as we think, an opportunity of satisfying ourselves in regard to their composition, we deem it a point in pathology of sufficient importance to allow of some brief remarks. It is true that the question might easily be settled by chemical analysis, but the infrequency of the occurrence of these crystals, and the minute quantity in which they are found, render this test impossible. We think, then, that these dumb-bells are not oxalate of lime, but that their presence may be accounted for by the disintegration of crystals of uric acid.

If oxalic acid and lime be added together, the crystals formed under these circumstances are always double pyramids, although at times so small as to be scarcely perceptible; and, however long the deposit be allowed to remain, neither dumb-bells nor ovals are ever found to make their appearance. Whereas, if a deposit, consisting entirely of uric acid, be carefully washed, and clear water added, we may discover, in a certain number of cases, after the lapse of a few days, that dumb bells are present, indicating, beyond a doubt, their formation from uric acid without the addition of lime. We were led to make this experiment from the following considerations:—We had frequently observed in a specimen of urine to which a small quantity of muriatic acid had been added, that, after standing a few hours, although crystals of uric acid only with a few epithelium scales and a small quantity of mucus were present, yet, after the lapse of some days, these same specimens would occasionally be found to contain dumb-bells, while the uric acid had either entirely disappeared or presented an amorphous appearance. We were thus shown that some relation existed between the dumb-bell crystals and those of uric acid, and that their formation was in all probability subsequent to the elimination of the uric acid by the kidneys. We then determined to take pure uric acid, or at least as pure as it could be obtained from urine by repeated washing,

and observe, under the microscope, the alterations that it underwent from day to day. By setting aside several specimens, and noting the changes that took place from day to day, we observed that, in the first place, the rectangular crystals had a tendency to become irregularly rounded off at their ends, afterwards to be fissured across near their centres in an oblique direction; and, finally, these two portions still adherent became rounded off in irregular steps towards the periphery of the figure; and this change we have remarked not once only, but on several different occasions. Should the crystals originally consist of rhomboids rounded off at their oblique angles, we may often observe that these first unite at their points—the two longitudinal axes being both in the same line—and then by the extreme points falling off, and these becoming, by degrees, irregularly rounded, they constitute a variety of the dumb-bell crystals in which the concavity of the sides is but slightly marked. Another, and, perhaps, the most common form of this transition stage, is where one end of the base is fully formed, as is also the union between the two, but the opposite head, instead of being round, is elongated to a point. More commonly, they are very irregular in shape, but still with resemblance enough to a dumb-bell to be sufficiently characteristic. The figures marked No. 4 in the wood-cut are of this variety. It is rare for more than one or two of these crystals, while actually in the transition stage, to present themselves at the same time under the field of the microscope. But within a few weeks past we have been fortunate enough to detect, in a specimen of uric acid put aside for this purpose, not only the dumb-bells in their formative stage, but also several fully formed, as well as some crystals of uric acid almost unchanged. This we copied from the field of the microscope, and is represented



in the wood-cut that accompanies these remarks, with the exception of the two figures marked four, which were observed on another occasion; for without some such explanation the change we have just been detailing could not readily be understood.

Close attention will also enable us to observe that the ovals usually described as separate figures from the dumb-bells, are in fact identical with them; the apparent

difference being in reality due to the different planes in which they are seen. Some of these are transparent dumb-bells, with a very slight concavity at the sides surrounded by an oval, the interval between the two being filled up

with a black space; while others, again, appear to be dark ovals with a small transparent square set in the middle. If these are made to revolve on their short axis, it will be seen that one face presents an oval, while a section made at right angles to this is a true dumb-bell. Both these forms, if the deposit is of any size, are usually seen together, but occasionally one only presents itself.

We are unable to speak with certainty as to the original shape of the uric acid crystal which determines the subsequent formation of dumb-bells, but are of the opinion that, in a majority of instances, the rectangle, with a height nearly equal to its base, more than any other form, is most liable to this transformation. They are seldom if ever observed at the time of micturition, and are in fact very rarely seen. Of the many hundred abnormal specimens of urine presented to us during the last few years for examination, we do not remember to have seen them but on four occasions, and in each one of these the urine had been voided twenty-four hours previously.

In his description of these figures, Dr. Bird states that "they are produced in all probability by a prolific arrangement of minute acicular crystals" (of oxalate of lime). But this we think cannot be the case. There can be no lime entering into their composition, for we have shown that their formation takes place when there is none of this substance present; but at the same time we must acknowledge our inability to explain the exact process that goes on. It would seem, however, from the changes exhibited under the microscope, that this result is one of simple disintegration. All crystalline bodies made up of organic elements have a tendency, by exposure to air or water, to lose their clear, distinct outline and sharp edges, and to become amorphous; and, in all probability, crystals of uric acid of a peculiar shape have, under circumstances which we cannot yet explain, a tendency to break up and agglomerate in certain forms, more or less referable to dumb-bells.

In connection with this subject, we may mention here a change somewhat analogous that occurs in the crystals of the triple phosphate. The phosphate of magnesia and ammonia, or, as it is more commonly called, the triple phosphate, occurs in the urine under two different forms, one stellar and the other prismatic; and, although both of these present an endless variety of crystallization, yet both may be included under one or the other of these heads. This difference has been heretofore explained by calling the one a monobasic, and the other a deutobasic salt, under the supposition that twice the quantity of ammonia was combined in the last in proportion to the other. Our friend Dr. David Steuart, of this city, however, has lately called our attention to the fact that these crystals may be formed, one from another, by simple aggregation. He succeeded in depositing them from the same specimen in both forms, and also in crystalline shapes intermediate between the two. This he effected by making an acid solution of the phosphate of ammonia and magnesia, and then adding very cautiously a drop of ammonia. This precipitates the phosphates immediately at the surface, a portion of which fall to the bottom

of the glass to be again redissolved. The upper stratum is, after a time, gently shaken, when more crystals fall with the same effect. There is a point, however, if the solution is not too acid, or sufficient ammonia has been added, when some of these crystals remain undissolved, and by carefully setting aside the tube at this stage, and allowing it to remain undisturbed for some time, we may detect, by the microscope, both the prismatic and stellar crystals with their intermediate stages. This experiment we have repeated, and are able to substantiate his opinion in regard to the mode in which these formations occur. Most of the stellar crystals are of two varieties; the first being composed of four rays, and the second of six. In the first we usually find, during this process, that, by aggregation of crystalline material, two prisms are formed which intersect each other at right angles; or else two of the rays which are in the same line become elongated, and material is gradually deposited in the interstices to make up a single perfect prism, the two long arms corresponding to the length, and the two short to the breadth of the crystal. In the second variety, where the figure has six rays, four of these become elongated in a similar manner, and the same deposition occurs as in the other; or else these rays are all joined together at their extremities, and the figure then filled up constitutes one variety of the prismatic crystal which is very frequently observed. These crystals, then, are not dependent upon the difference in proportion of ammonia in the two, but merely to the rapidity with which they are formed; nor is the stellar variety, as has been heretofore stated, indicative of a severer lesion than the other. We ourselves have never seen these stellæ already existing in urine at the time of emission, nor have we ever observed them to occur spontaneously.

The relation of these two forms of phosphate to one another seems to us a very interesting point in urinary pathology, and we are of the opinion that many of the crystals found in this secretion, heretofore considered as differing from one another in their chemical composition, will be found a more accurate observation to be formed either by the aggregation or disintegration of primitive crystals.

BALTIMORE, May 10, 1850.

ART. III.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, Secretary. (With a wood-cut.)

Feb. 11.—*Melanosis of the Eye.*—Dr. BETHUNE reported the following case. The patient, a healthy farmer, sixty-five years of age, entered the Eye and Ear Infirmary under his care. Twenty years ago, he first observed a red spot at the outer angle of the left eye, wedge-shaped, and with the apex towards the pupil, as in pterygium. For fifteen years it was stationary; but five years ago it began to grow, and at the end of one year he was only able to discern

the light. Pain came on, when the disease began to increase, and was severe for the first two years; it was then less again till last autumn, since which time it has increased, being occasionally severe and darting, and at times dull and heavy.

On examination, the right eye is well. Lids of left eye separated by a black, smooth, but irregular mass, projecting from the anterior third of the ball, and compared to a pecan-nut with the base outward and the anterior half cut off. A few days after his admission the eye was removed, and at the end of a week the parts were healing well, and he was discharged. The eye seems to be healthy, except for the tumour, which does not involve the internal parts.

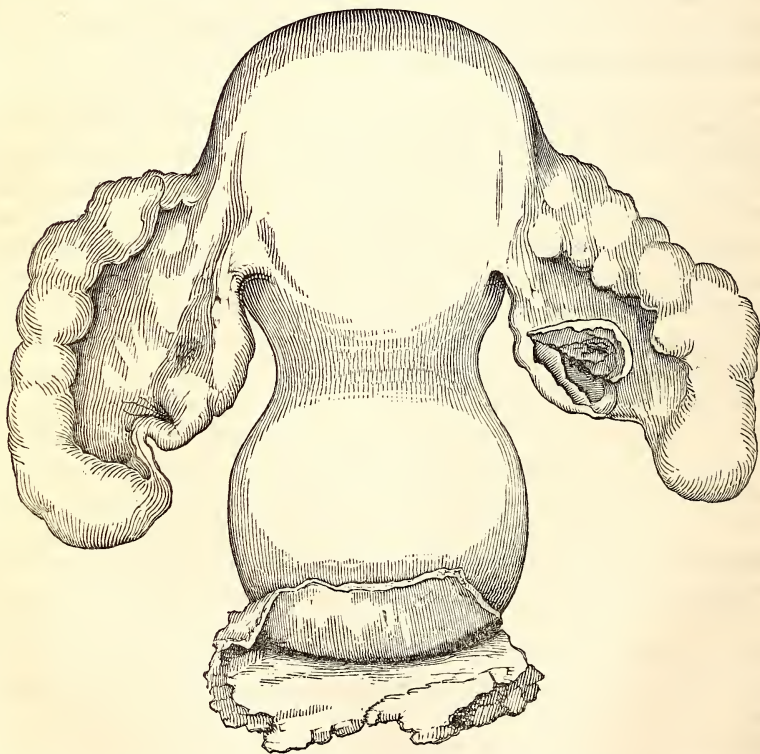
Under the microscope, Dr. H. J. BIGELOW had observed the following appearances: "First, numerous cells, apparently epithelial; secondly, numerous cells, of irregular outline, enlarged by a power of five hundred diameters to the size of a five-cent piece, and containing sub-cells and nuclei; also some of a marked caudate figure. These, with others decreasing to simple nucleated cells, with one or two nuclei, the diameter of which cells were only three or four times that of blood corpuscles, were probably cancerous. And to account for the black colour, the whole field was filled with granules, often aggregated into masses resembling Gluge's granulation cells; which last, however, may have been the product of independent inflammation."

Feb. 11.—Imperforate Vagina.—Dr. J. B. S. JACKSON exhibited the specimen which he had removed this afternoon, and gave the following account of the case. The patient was a respectable unmarried female, twenty-five years of age, and well developed in regard to the signs of puberty; the catamenia, however, had never appeared, and for this she was for a long while treated in former years. Seven years ago, the physician, under whose care she has since been, was called, and found a tumour in the middle of the abdomen, rising some way above the umbilicus, and feeling altogether like a distended uterus; upon each side of this, and extending towards the groins, was an elongated and much smaller tumour. On examination by the rectum, the cavity of the pelvis seemed to be filled by a tumour as large and solid as the foetal head. The external and internal labia were well formed; but on separating the latter there was found to be a complete closure of the vagina. The lateral tumours since that time have been about stationary, but the central tumour has varied somewhat in size. Meanwhile, the patient had suffered severely from bearing-down and other pains about the pelvis, with considerable dysuria; the general health, however, was tolerably good, her death at last being rather sudden, and connected with some oppression about the chest, the cause of which was not ascertained on dissection. In regard to an operation, which seemed to have been so imperatively required, a consultation was held with two or three professed surgeons when the occlusion was discovered, but the opinions were against it.

On examination after death, the tumours were found as above described,

and also the external organs, except that at the seat of the occlusion there were three longitudinal folds, looking not unlike the internal labia on a small scale. The parts having been then removed, the uterus and vagina were found to be immensely distended, and on incision there were discharged three pints of a dark-red, inodorous fluid, resembling venous blood, and without a trace of coagulum. The two cavities are of about equal size, with a very marked contraction midway, corresponding with the os uteri, which, however, is in a good measure effaced. The parietes are about one-third of an inch in thickness, and quite dense; muscular structure of uterus developed, the inner surface being nearly smooth and without any trace of arbor vitæ; vagina less smooth internally, and thickness of parietes as great at the seat of occlusion as at any other part; the whole thickness of the fleshy mass that separates the vagina from the vulva being probably not more than half an inch.

The Fallopian tubes, which formed the lateral tumours felt during life, are distended in proportion to the uterus itself, except at their origin; the openings upon the inside of the uterus, however, being large enough to admit a small probe. The further extremities terminate bluntly, and the general out-



line of the tubes is irregular and knobbed. Upon cutting one of them open, it is seen to be filled with an uniform, inodorous deep brown substance, not

very unlike, though harder than, indurated feces. The parietes are thin but quite dense; and towards the uterus the cavity seems as if divided into numerous compartments by transverse partitions. There are also connected with the external surface of the tubes small cysts, filled with a material similar to that found in the tubes; and in the omentum, which adheres partially to the tubes, are found one or two other cysts, besides numerous very small deposits scattered over its surface, and looking not unlike the result of melanosis.

The ovaries are rather large and smooth, and one of them contains a cyst about the size of an almond.

On the following day, the uterus and vagina having been distended and the incision nicely closed, a very accurate and highly finished drawing was made of the parts for the Society, by Dr. J. C. Dalton; and from this the accompanying wood-cut has been taken.

Feb. 11.—Aneurism opening into the Trachea. Reported by Dr. MINOT.—The patient was a female, thirty-six years of age, who had had dropsy for fifteen years, and diseased heart for the last four. Five weeks ago, there was noted a hoarse cough, dyspnœa, wheezing, and at nights orthopnœa, but without expectoration or palpitation. These symptoms increasing, she was suddenly seized with extreme dyspnœa, the inspiration being easy, but the expiration laboured and rattling; pulse 160, and very feeble; whole chest resonant on percussion, but with sonorous and sibilant râles in every part. From this attack she revived, after a copious expectoration of clear, viscid fluid; but soon had a second. The respiration continued somewhat rattling, and always had a peculiar tubular sound, which could be heard at a distance from the bed; she complained, also, constantly of a sense of oppression in the trachea. Nine days before her death there came on pleuro-pneumonia; but this seemed to be subsiding, when, after a slight fit of coughing, a torrent of blood poured from the mouth and nose, and she died instantly.

The specimen being shown by Dr. M., there is seen to be some ill-defined dilatation of the arch of the aorta, with disease of the parietes, but nothing that can be called a sac; upon the inner surface of the artery at this part there is a deep ulcer, four or five lines in diameter, and this had burst into the trachea just above its bifurcation; a red, fleshy little mass projecting into this last at the seat of perforation. The bronchi were full of coagulated blood, and there was also found pneumonia, pulmonary emphysema, old pericardial adhesions, and ascites.

Feb. 25.—Laryngitis.—Dr. JACKSON showed the specimen, received from Dr. GEO. H. GAY. It was taken from a woman who was attacked very suddenly, and died in two days; she had aphonia, very urgent dyspnœa, and dysphagia so severe that she was almost convulsed on attempting to swallow. She had been attending upon her sister, who had erysipelas following the re-

moval of a cancerous breast. There is a yellow appearance of the cellular tissue, as if from an infiltration of pus, though scarcely any can be forced out, affecting the upper part of the larynx, and extending downwards about the œsophagus as far as where the parts were cut across, the throat only having been examined. The glottis is soft, and not excessively swollen; and upon one side is an appearance upon the surface as if a slough was about to form; the mucous membrane being otherwise unaffected. Dr. J. remarked upon the striking resemblance, in regard to the anatomical appearances, between this case and one reported by him a few months since (see last number of *Journal*); the same appearances he had also found, though to a much less extent, in the case of our lately deceased member, Dr. John D. Fisher. (See *Boston Med. and Surg. Journ.*, March 13.) He also remarked upon it as an interesting fact, in relation to any question as to the nature of the inflammation in the above case, that a third sister has been attacked with erysipelas since the death of the second, but is likely to recover.

Feb. 25.—Paracentesis in Acute Pleurisy.—Dr. HOMANS reported the case which he had recently seen in consultation with Dr. MORRILL WYMAN, of Cambridge. The patient was a healthy woman, and the operation was done on the twelfth day of the disease. There was great pain, and such urgent dyspnœa that she had been unable for some time to lie down in bed; with enlargement of the side and other physical signs of effusion. An exploring needle having been passed in by Dr. W., about an inch below the left scapula, $\frac{3}{4}$ viij of serum were drawn off, but no pus; and with such relief that the patient was able to sleep comfortably that night, in the horizontal position. Two or three days afterwards about half as much more was drawn off, and recovery soon followed.

Feb. 25.—Fatty Liver.—Dr. HOMANS reported the case, which occurred in a child between three and four years of age. When about nine months old, it began to grow quite fleshy, and continued so ever afterwards. Previously to this the liver had been felt to be enlarged, and at the time of death it occupied the whole cavity of the abdomen. The organ, which is shown, is of a very uniform, pale fawn colour, smooth upon the surface, and greasing the scalpel; $\frac{3}{4}$ ss of oil was also shown, which was obtained from $\frac{3}{4}$ iv of the mass. The child's health was sufficiently good, except that it was subject to attacks of spasmodic dyspnœa; and it died at last from pneumonia.

Some years ago, another and rather older child in the same family died with an immense liver, but the organ in that case was dark-coloured, quite hard, and apparently granulated. There is still a third child, now living and about six years old, with enlargement of the organ. The parents and two other children appear to be healthy.

A fractured femur was also shown, from the subject of the present case. The bone was broken in the early part of the summer, and again in November

at the same place, and each time the union appeared to be strong. The fracture is just below the trochanters, very oblique, and firmly united, though the bone is still somewhat vascular; appears somewhat as if it may have been only partially broken. Dr. J. M. WARREN, who attended the child in November, is confident that the fracture was then complete.

Feb. 25.—Pleurisy followed by Pneumothorax and Gangrene.—Dr. C. E. WARE reported the following case: A young man, thirty-three years of age, was taken January 30, 1850, with chills, cough, loss of appetite, and some dyspnœa. He kept about till February 2, when pain occurred in left side, greatly aggravated on full inspiration was first examined by Dr. Ware; Feb. 4th. He then had a pulse of 84. His tongue was thinly furred, and pasty. He had a sharp pain under the sixth rib, with considerable dyspnœa. There was less respiration in the left back and front than in the right. When up, dull on percussion behind. When lying down, greater resonance on percussion over cardiac region than on corresponding part of right side. There were no bronchial sounds nor râles. Very little cough, and only an occasional expectoration of thin transparent mucus, without stain.

6th. His pulse had reached 108. His expectoration was about an ounce in the course of twenty-four hours, consisting of tenacious mucus with a few blood stains.

On the 8th, he had become entirely flat on percussion at the base of the lung, both before and behind, and there was an entire absence of respiratory sound. His pulse was 112.

10th. His lungs were little affected by blue pill, and there was some wandering during the night.

13th. Had a good night; pulse 100. Expectoration very small in quantity; transparent mucus with a few stains of fresh blood; no wandering. Puerile respiration and resonance on percussion in right back; perfectly flat, and no respiratory sound below the spine of scapula in left back, which is more full and rounded than right.

14th. At about twelve o'clock in the night, without any previous warning, or change in his symptoms, he was seized with a violent paroxysm of coughing, and began to expectorate pure pus, of which he raised in the course of two or three hours a pint. In it there were a few specks of blood. It was attended with great dyspnœa, obliging him to sit up. His countenance became quite sunken. His pulse rose to 124. No respiratory sound heard in left back; in front heard as low as third rib. Respiration clear, without râles; puerile on right side before and behind.

15th. Pulse 104. Expectoration of a pint of pure pus in the twenty-four hours, without fœtor; cough frequent, easy, loose; mind clear.

16th. Had another attack of copious purulent expectoration—a pint in two hours; pulse 120; great dyspnœa; pus more liquid and fetid; coarse mucous râles under left clavicle.

18th. Pulse 112. Expectoration less in quantity, and thicker. Under both clavicles resonance on percussion greater than natural in the erect position; about equal on the two sides. He sleeps very well in the erect position.

23d. Pulse 108. Expectoration much diminished, of a less purulent character, more thick and tenacious; respiration pretty easy in a horizontal position, which he tried yesterday for the first time since he began to raise the pus; cough much less severe.

25th. Loud friction sound over the left front above cardiac region.

28th. Emaciation very great; expectoration small in quantity, very liquid, fetid pus; respiration more laboured; a strong expiration, with some râle over upper part of right front. Great resonance on percussion over whole back on both sides, in a reclining position. Under the left clavicle in front, a very clear respiratory sound, so closely resembling a cavernous sound* as to make me doubt if it was not so, not being able to tell it by the voice.

March 1st. No purulent expectoration; only about an ounce in the twenty-four hours of adhesive mucus; pulse 101; general aspect better.

3d. Pulse 116; respiration more laboured; expectoration purulent, of a more unhealthy colour and character, and a decidedly gangrenous odour; over the nates there is a commencing slough.

7th. Pulse 100; tongue clean and moist; slough on back is thrown off; expectoration small in quantity, and mucous, except when he is disturbed, when he raises a thin, dirty, fetid pus, hawking and spitting it out with very little cough or effort.

8th. Through the day he gradually failed, and without the occurrence of any new symptoms, died early on the morning of the 8th.

The treatment was in the commencement, leeching, antimony and mercury; and after the occurrence of the pneumothorax, stimulants and tonics. The autopsy, owing to circumstances, was made in a hasty and rather unsatisfactory manner. The chest only was examined. In the left pleural cavity, there was by a hasty measurement about forty ounces of thin, fetid, dirty pus. The lower lobe of the left lung was entirely carnified by compression. The upper lobe in front and at apex was vesicular and healthy, distended by air to an almost emphysematous degree. Posteriorly, at about an inch and a half to two inches from apex, there was a ragged opening in the pleura, around which for an inch or more the lungs had a gangrenous appearance. No tubercles or traces of tubercles could be discovered in this lung. There were a few adhesions about the lower lobe and at the apex of the upper lobe.

In the right pleural cavity there was no effusion; a few adhesions. Towards the apex of the upper lobe of the right lung there was a group of tubercles. The lung healthy around them. There was quite extensive pneumonia of the middle and lower lobe; hepatization, but apparently recent in occurrence.

* From the post-mortem condition, this was evidently due to the healthy lung, floated up to this point by the fluid in the chest, and rendered almost emphysematous by compression.

This case was one of simple pleurisy with effusion in the outset, in a man who had never presented any signs of tubercles, and whose family were none of them phthisical. Until the fifteenth day from the attack, there was nothing peculiar in the course of the disease, and there was no reason to anticipate anything unfavourable. Then he was suddenly attacked, without the least warning, with violent cough, extreme dyspnœa, and most profuse expectoration of pus. The pus, as he raised it, was quite liquid, like that found in a close serous cavity, but became thicker on standing. On the 17th it had become quite fetid. From this time he continued on the whole rather improving to the twenty-ninth day from his attack, the amount of expectoration varying very much—sometimes scarce anything for twenty-four hours, and then suddenly very copious. When very small in quantity, it was simple transparent mucus. When there was any considerable amount, it was thin, fetid pus, similar to that found after death in the pleural cavity, showing distinctly its source by its character. From his general symptoms and from the physical signs, it is probable that on the twenty-ninth day the pneumonia on the right side began under which he sank and died. On that day was also first noticed the gangrenous odour in his expectoration. The occurrence of pneumothorax except by tubercle, is extremely rare. In the present case it probably occurred by tubercle, although none could be discovered, nor anything which indicated its previous existence. The gangrenous, ragged condition of the lung might easily have effaced or concealed any trace of it. The existence of tubercle on the other side adds to the probability of there having been tubercle on this also, when it is so difficult to explain the accident in any other way. The gangrene would not explain it, as that could hardly have occurred in much less than ten days or a fortnight after the communication with the pleura took place. There was no odour to indicate it, and the pus at the commencement was perfectly healthy in its character, contrary to what one would expect to find in contact with a surface undergoing the process of gangrene. The gangrene of the lung, the slough on the back, and the pneumonia on the right side, all began apparently at about the same time.

March 11.—Vesicular Disease in a New-born Infant.—Case reported by Dr. BETHUNE.—The disease appeared on the second or third day, and lasted about a week. Upon the upper extremities the vesicles were quite numerous, and about as large as the head of a pin; but upon the abdomen, where there were only a few, they were probably from four to six lines in diameter. There was little or no redness about them, and they at last dried up, causing meanwhile nothing more than a little fretfulness.

March 11.—Painful Cutaneous Tubercle.—Dr. J. M. WARREN reported the case of a female, thirty years of age, who had a small, projecting nipple-shaped tumour on the skin of the right nates. It was of five years' standing, and she complained greatly of the suffering, it being of the most insupport-

able kind, and occurring in paroxysms. At these periods she would not allow any person to come near her. Entire relief followed its removal. Its texture was fibrous, and no cancer cells could be detected in it under the microscope. The character of the pain was the same as that observed in the *subcutaneous painful tubercle*.

The wound was examined, after the excision of the tubercle, for the purpose of discovering if any nervous filament had been pressed upon by it, but none could be detected.

March 11.—Tumour of the Orbit. Dr. J. M. WARREN.—Dr. Warren first saw the patient two months since, in company with a distinguished physician of a neighbouring town. The history of the case is as follows:—

The patient is sixty-nine years of age, tall, and, with the exception of the present disease, healthy. Four years ago, after exposure to a current of cold air on his face while sitting at a lecture, he felt a soreness at the upper part of the orbit of left eye. Shortly after, a swelling appeared at this spot, and this, increasing, gradually filled up the socket, forcing the eye from its situation, so as to project it forwards and outwards, and prevent vision, except of objects on that side.

The surface of the tumour was irregular, and covered by enlarged veins. It was tense, elastic to the touch, and its appearance at first was that presented by encephaloid disease when making its way out from the interior of the cranium.

In the course of two months it had increased one-third. On a careful exploration of the tumour, an indistinct feeling of fluctuation was perceptible. There was, also, projecting from the upper part of the socket, a small shelf of bone which seemed to enter and be incorporated with its parietes. This led Dr. W. to the belief that it might be periosteal, and an exploratory operation was advised.

The patient being etherized with chloric ether, an incision was made through the skin and orbicular muscle of the eyelid. This at once disclosed a sac with an osseous deposit in its parietes, which, on being punctured, discharged about four ounces of fetid pus. The finger being now passed into the cavity, discovered, below, a bony sac, which as far as was practicable was dissected out and removed. On carrying the finger upwards, no resistance was encountered until it reached a distance of two inches above the margin of the orbit.

The pressure of the fluid had apparently caused an absorption of the lower wall of the frontal sinus, and forced upwards that portion upon which the anterior lobes of the brain repose. Two openings could be distinguished within the cavity; one leading into the right frontal sinus, the other communicating by a very minute opening with the nasal cavities: the interior was lined with a delicate membrane.

After being once emptied, the cavity became again filled with pus, coming, as was supposed, from the other sinus.

The patient bore the operation well, and, when seen some hours afterwards, was quite free from pain, and without any unpleasant symptom.

It was estimated that from six to eight ounces of pus escaped from the tumour in the course of the day. This patient was heard from on May 7th, nearly two months after the operation. His physician states that some days after the operation the discharge was "immense." Since this, it has gradually decreased. The eye has nearly regained its natural position, and he sees as well as ever. His health is unimpaired.

March 25.—Chronic Ulcer of the Stomach. Reported by Dr. W. T. PARKER.—An Irish tailor, aged twenty-one years, came to this country five years ago. Previously healthy, he had an attack of vomiting on his way to the emigrant ship. He remained in the harbour six days before sailing, without any return of it, but during a voyage of seventy days it occurred almost incessantly. He landed in Nova Scotia, where the vomiting continued, in spite of any medical treatment. For six months he vomited almost daily; and, during that time, was never free from that symptom for more than a fortnight. At first, there was nothing peculiar noticed in the character of the matters vomited; after some time it resembled in appearance coffee-grounds. The stomach was remarkably distended, having the appearance of a large tumour before the act of vomiting, which would occur very suddenly, the quantity discharged often amounting to from four to six quarts. During all this time his appearance was slightly anemic, his appetite and strength moderately good, his bowels sometimes costive; the swelling of the stomach giving him uneasiness rather than pain. At times able to attend to his trade; often interrupted in it by the exhaustion of vomiting.

Dr. P. saw him first fifteen months ago, and procured for him a free bed at the Massachusetts General Hospital. There he remained under treatment four weeks, and was discharged not relieved: the vomiting continuing as profuse and exhausting as ever. He came under Dr. P.'s treatment March, 1849, an aggravated condition of all the above symptoms then existing. *Syr. ferri iodidi gtts. x, ter in die sumend.* was prescribed.

The vomiting ceased immediately, and strength began to return.

He persevered in this treatment through the summer months, with such relief as to be able to work at his trade, and from the administration of the first dose of iron, had no return of vomiting at all, till late in December, when a slight attack occurred. This was again relieved by the same treatment. During the winter of 1849–50 he had two or three attacks of the same. * *

March 24th, 1850. Called to him again. Has had a violent return of vomiting, attended with unusual pain in the abdomen and swelling. He was partially relieved by the warm bath, but collapsed and died in twenty-five hours after his last attack.

On examination, found the abdomen distended by air, and containing nearly two gallons of fluid similar to that vomited. Stomach very greatly enlarged,

and coats very much thickened, especially towards the pylorus. In the lesser curvature, one inch from the pylorus, was discovered an ulcer four lines in diameter, which had entirely perforated the stomach, and near it a smaller one which had perforated the mucous coat. There were considerable adhesions between this part of the stomach and the gall-bladder. Further examination was prevented.

March 25.—Poisoning by Nitric Acid.—Dr. J. M. WARREN reported the case as follows: The patient was a negress, thirty-four years of age, of abandoned character, and took the acid at 6 P. M. on the 3d of March, thinking that she was three months pregnant, and wishing, she said, to destroy her child. The quantity taken into her mouth was reported to be ℥ij, but most of it was spit out. Alkalies and mucilaginous drinks were used, but the burning in the mouth was intense through the night, with restlessness and delirium. The next morning she was brought from the jail, where the acid was taken, to the hospital. Yellow stains were then observed upon the clothing, and the whole inside of the mouth and fauces, so far as could be seen, was of a deep yellow colour, the tongue looking as if covered with Indian meal; the respiration being painful, laboured, and stridulous, and speech almost impossible. Extremities cold, countenance of a leaden hue; pulse 120, and very small. For the first four or five days after her admission she suffered from soreness of the mouth and throat, dysphagia, thirst, and salivation, with some vomiting; she also complained of tenderness of the abdomen, but not particularly over the stomach, walking with difficulty and bent much forwards; but this was perhaps owing to her having been thrown down and stamped upon, in an affray, on the day on which she took the acid. After the first day or two she was much of the time up and about the ward; at the end of a week she was reported quite comfortable, and having some appetite; and on the 14th of March, as she was doing well, she was removed back to the jail, there never having been any fever, but rather a state of depression. On the morning of the 16th, she was attacked with cramps in the stomach, and excessive pain and tenderness, which were partially relieved by opiates; on the following morning, however, she was found dead in her cell, with a great quantity of blood in the bed about her, and which she had apparently vomited.

On dissection, there was observed great rigidity; upon the middle of the tongue a large, yellowish, smooth patch; some redness of epiglottis; œsophagus healthy for the first two inches; but below this it was found exceedingly soft, of a greenish yellow colour internally, purple externally, and full of coagulated blood. The stomach was in a similar, though much worse state; externally, it had the same purple colour, and was universally adherent to the neighbouring parts by recent lymph, except at the left extremity, where there were old and close adhesions to the spleen; internally, it was of a greenish yellow colour, emphysematous, and so perfectly softened and friable that it could not be separated from the surrounding parts without giving way in every

direction; the anterior face being detached from the rest of the organ to a great extent when the abdominal parietes were raised; cavity filled with recent, coagulated blood, and the open orifices of several vessels distinctly seen on inner surface. The intestine contained blood throughout the first two or three feet, but was otherwise well, as were the other organs, so far as observed; uterus not gravid.

March 25.—Tumour within the Larynx.—Dr. JACKSON exhibited the specimen, which he had received from Dr. AUGUSTUS MASON, of Billerica. The patient was a man about fifty years of age, very fleshy, and in robust health, except for the trouble in the throat. For twelve years or more there had been hoarseness, with wheezing, and for the last two or three years complete aphonia; there was also much dyspnoea on over-exertion, and, when asleep, a distressing noise as from impending suffocation. His death at last was rather sudden, and seemed owing to congestion of the lungs. The tumour is about seven lines in diameter, well defined, of a rounded form, rough on the surface like a syphilitic wart, fleshy in consistence, and having a somewhat fibro-cellular appearance on incision. Its situation is just below the ventricles of the larynx posteriorly, and it is attached upon each side broadly and to about an equal extent, the intermediate portion being free.

The following microscopic appearances were observed by Dr. W. J. BURNETT: "The primitive original basis of this formation supposed to be an epithelial structure. Pavement epithelial cells of various ages were everywhere plentifully present, being folded in by fibrous tissue; which, as an hypertrophy of that normally belonging to the part, is always liable to accompany the abnormal production of simple individual cell-structures, forming the material basis on which the latter rest."

March 25.—Hydatid Degeneration of Ovum.—Specimen exhibited, and the following report of the case made by Dr. PUTNAM.—The subject of this case is a young married woman. Her last child born three years ago. Menstruation since that time regular. Last menstruation occurred during last week in November. During the following three months, suffered from pain in the back, bearing down, and copious leucorrhœa. There was also an unusual degree of chilliness, which made warmer clothing necessary. The above symptoms were aggravated at the periods of expected menstruation. She was positive that she was not pregnant, because her sensations were different from those she had usually experienced during gestation.

On examination, at the end of the second month, the body of the uterus was decidedly enlarged. No special change in the neck. At the end of the third month the enlargement was found to have subsided. On the fifteenth of March—at the middle of the fourth month—hemorrhage occurred. At first very slight, but gradually increasing and attended with pain until the twenty-third, when the hydatids were discharged. Hemorrhage continued

more urgently until checked by the use of ergot, but did not entirely cease for three weeks.

The hydatid cluster would more than fill a half pint bowl—the separate vesicles being of various sizes, from a pin's head to half an inch in diameter. The usual term hydatid has been employed, but it is well known to be a vesicular disease of the ovum, resembling hydatids only in external form. In this case no fœtus was detected, but the deciduous membrane was perfectly distinct.

Dr. Burnett having examined some of these cysts microscopically, found the parietes to consist of a simple aggregation of minute granules, such as constitute the primary cell membranes, but neither fibrillæ, fibres nor vessels; the structure being quite different from that of cysts in general. The liquid contents he found to be hyaline, and, in the larger ones, the granules were suspended for precipitation upon the internal surface; the action of acids showed the presence of albumen.

April 8.—Disease of the Radius after fracture.—The case occurred in the practice of Dr. ADAMS, of Waltham, who sent the following history: The patient is a healthy married woman, and belongs to a healthy family. Eleven years ago she broke the right radius near the wrist, and in about four weeks union had so far taken place that the dressings were removed; when, about eight or ten days afterwards, she fell and broke the bone again in the same place, as she supposed; she did not, however, consult Dr. A., and there is much doubt as to the second fracture. Three months after the fall she asked his advice in regard to an osseous deposition that had appeared at the seat of injury; it was then about the size of a very large bean, and from that time continued to enlarge until amputation was performed on the 25th of March. During its whole course, the disease gave very little trouble, except from its size and the embarrassment to the motion of the limb; there never having been any pain nor tenderness until last November, since which time the pain has been gradually increasing until it became so intense as to demand an operation.

The whole bone begins to enlarge just above the commencement of the lower third, and gradually; but at last forms a tumour nearly as large as the two fists; the general form being pretty regular, though deep grooves are seen in its substance, along which run the flexor and extensor tendons. Having been sawed through longitudinally, it is seen to be a mere shell of bone, and not everywhere continuous; two or three laminæ projecting a little way into the cavity from its internal surface. This cavity is filled with a soft substance, which presents two very different characters: the first and probably the most recent has a somewhat fibrous, grayish, translucent appearance, and seems to be infiltrated with serum, with a trace of extravasated blood in one or two places. The larger part of the mass, however, is made up of a yellow, soft and perfectly opaque substance, like soft custard. This last is very marked

towards the outer edge of the tumour and just above the wrist-joint, where the bony parietes are destroyed, and the soft parts are shooting out. Dr. H. J. Bigelow showed a beautiful coloured drawing of the recent section ; and described the microscopic appearances of the new formation, in which he found no positive evidence of cancerous disease. The ulna and bones of the hand appear to be healthy.

April 22.—Carcinomatous Tumour weighing fourteen and a half pounds, occurring in a little girl only eleven years old.—Dr. JACKSON had recently examined this case. The abdomen was immensely distended, and measured thirty-four inches in circumference. The tumour originated in the cavity of the pelvis ; the uterus and rectum being intimately connected, though not buried in it ; adhesion otherwise not extensive. It consisted of a solid, white, rounded mass, one or two lobes upon the surface being felt before the abdomen was opened. Internally, it presented well-marked encephaloid characters, the colour being generally white, but the consistence varying somewhat. A similar tumour, about the size of the fist, was found near the stomach, but none of the organs were affected excepting those of the pelvis ; the ureters and pelvis, however, were distended, as they often are, by pressure from without. No fluid in peritoneum.

The patient had been under the care of Dr. W. Lewis, and the history of the case was obtained by Mr. S. G. Wolcott, one of his students. The child was of a lively disposition, and healthy until her fourth year, when, after an injury, she suffered from what was regarded as a scrofulous affection of the ankle-joint ; but from this she recovered, and continued strong and robust until she was ten years old, when the disease returned ; and though she afterwards improved, she was unable to bear fatigue. In February, 1849, she walked two or three miles out of town, complaining of fatigue, and, on her return, of great pain in the right iliac region. The abdomen was exceedingly distended ; and projected, it was said, like a sugar-loaf. For a week she was confined to her bed ; after which the swelling subsided, though a hard substance remained in the pelvic region about the size of a hen's egg ; and this was the apparent beginning of the tumour, which afterwards constantly increased. Pain in the iliac region such that she would frequently awake in the night with loud screams ; there was also some dysuria, much trouble in defecation, frequent vomiting and epistaxis, with night sweats ; her appetite, however, was strong, and her constitution bore up well under the disease, so that though her whole appearance was delicate, she was able to keep about during the winter, being confined to her bed only for about four weeks before her death.

April 22.—Friction Sound over the Liver in Ascites.—Dr. JACKSON has such a case now in the Hospital. The abdomen has been much distended, but as the fluid of late has been absorbed so that the parietes have become

relaxed, the left lobe of the liver is distinctly felt for about two inches below the ensiform cartilage. If then the abdominal parietes are brought into contact with this organ, a very distinct though fine frottement is felt by the hand, and felt or heard by the ear through the stethoscope, as the two surfaces rub over each other in the movements of respiration or otherwise. The patient is an elderly man, and has no symptoms whatever of peritonitis; disease of the liver being suspected as a cause of the effusion, as it cannot be traced to the heart or kidneys, though there is no more positive evidence of the first organ being affected than of the two last.

Some years ago, Dr. J. met with this same physical sign in another case of ascites; and where it was even more marked than in the one just reported. On dissection, he examined the parts very carefully as soon as the abdomen was opened, but nothing unusual was found to explain the phenomenon; the liver was granulated, but there were no adhesions, nor any lymph to form any, upon the opposing surfaces; the situation of the frottement being the same in the two cases. Dr. J. referred to the observations of Dr. Bright in regard to a friction sound over the abdomen where adhesions are forming on the subsidence of peritoneal inflammation; observations, however, which he had never seen, and which he had never known to be confirmed here.

April 22.—Encysted Tumour; removed by Dr. S. D. TOWNSEND, and exhibited to the Society by Dr. W. E. TOWNSEND.—The patient is forty-five years of age, and is sure that the tumour had existed from the time he was a year old, if not from birth. It was situated over the middle of the sternum, loosely connected with the surrounding parts, without any discoloration of the surface or tenderness; was of a regular, ovoid form, about the size of a goose-egg, and had grown one-half within two years. The cavity was filled with a curdy, almost putty-like substance, of a dirty, brownish yellow colour, and formed into very uniform, rounded masses, about three or four lines in diameter, with some thick liquid, in which were many small, rather bright, scales. Under the microscope, this substance appears to consist principally of fat and epithelial scales. There are also a considerable number of loose hairs throughout the mass. The sac is lined by a well-marked cutis, but, to some extent, by what appears at first sight rather like a mucous membrane; this last being covered in part by cuticle. Hairs from two to three inches in length are also seen growing from the cutis; and, whenever seen, they are generally white, though some of them are nearly black.

April 22.—Encysted Tumour.—Dr. H. J. BIGELOW had recently removed such a tumour from over the upper part of the left scapula. The patient is a woman forty-nine years of age, and had had the disease for more than thirty years; occasionally it inflamed and threatened to suppurate, but generally it was nothing more than a mechanical annoyance to her. Dr. B. showed the material removed from the cysts; about five or six ounces in quantity, and

resembling thick, coarse Indian-meal gruel ; the greater part of it, in fact, consisting of opaque, yellow flakes, to the naked eye, and being made up of epithelial scales, as appeared under the microscope. He also showed a very beautiful coloured drawing of the parts as they appeared before the operation.

ART. IV.—*Annual Report of the Committee on Medical Chemistry*. By JNO. C. DALTON, Jr., M. D. (Read before the Boston Society for Medical Observation, June 4th, 1849.)

Urate of Ammonia.—The first subject to be noticed in this evening's report is the deposit of urate of ammonia from the urine. Though this deposit has been noticed by physicians from an early period, and is, perhaps, of more frequent occurrence in the urine than any other, yet its exact pathological signification is not by any means, as yet, fully determined. More extensive observations will be necessary to establish definitely the relations of this, as of some other urinary deposits ; and it is rather for the purpose of directing the attention of the society to the matter than because we have collected a sufficient number of facts to settle any very important point, that the subject is brought forward at present.

It is stated by authors generally that the deposit of urate of ammonia indicates a febrile condition of the system ; and there can be no doubt, from the evidence in our possession, that it is, in reality, one of the most common phenomena which accompany vascular excitement. Thus, Andral has reported thirty-three cases of pneumonia, in seventeen of which urate of ammonia occurred as a deposit, either constant or occasional. Simon, also, mentions its occurrence in pleurisy, bronchitis, and inflammatory diseases generally. Still, this does not show us on what particular circumstance its production depends—whether it is consequent on the disturbance of the circulation, of the nutrition, or of the digestive organs ; or, in fine, whether it results, in common with these other symptoms, from the original cause of illness. It certainly does not invariably accompany inflammation ; and, on the other hand, vascular excitement is not absolutely necessary to its production.

I have noticed the deposit of urate of ammonia in eleven different cases, in some of which the sediment was transitory, in some occasional, and in some constant. Two of these were cases of phthisis, three of cancer, one of bronchitis, one of scrofulous disease of the tarsal bones, two accidental injuries, one of typhoid fever, and one of sudden and extensive gangrene. Such a list as the foregoing, however, can lead to almost no definite conclusion with regard to the true cause of the symptom. It is evident that the principal disease for which the patients were under treatment may be very different

from the affection which immediately produced the deposit; and though these eleven cases are reported under such various names, yet the appearance of urate of ammonia may have depended on the same, or similar causes in every one of them.

The deposit itself presents important varieties in different cases. In three instances, it was white or light yellowish in colour; in eight, red or reddish-yellow. In seven it was abundant, in four moderate or slight in quantity. The difference in colour is spoken of by nearly all the writers as an important circumstance with regard to the signification of the deposit; as a general rule, the red variety being considered as indicating serious disturbance of the system, and the white only trifling or temporary derangement. This rule, however, cannot be strictly relied on in the present state of our knowledge. One of the three cases in which the deposit was white was that of a mild typhoid fever, another of confirmed phthisis, and the third was a case of advanced cancerous disease, in which the whole system was invaded by the malignant cachexia, and the patient reduced by emaciation, pain, and debility. In this instance the urine deposited uric acid constantly, but the urate of ammonia varied from day to day in quantity, and was sometimes altogether absent.

Notwithstanding this, we cannot doubt that the light variety is, in general, a less serious symptom than the red. Thus, in two cases in which the urine was watched from day to day (one a case of injury of the head, the other an acute and extensive bronchitis), the deposit, red at first, gradually grew lighter in colour as convalescence proceeded, and at the same time diminished in quantity until it finally disappeared.

With regard to the characters of the urine depositing urate of ammonia, in the great majority of cases, viz., eight out of eleven, it was scanty, and mostly of high density. In some instances the quantity during twenty-four hours was so low as four to five ounces, and the average specific gravity so high as 1032, 1034, or even 1038; so that the urine crystallized freely on the addition of nitric acid (nitrate of urea). The urine had an acid reaction in every case but one, where it was slightly alkaline, and contained also a deposit of phosphates. This happened in the case of injury of the head, and occurred on the second day after the accident. The next day, however, the urine again became acid, and continued so throughout. Simon mentions the fact that urine depositing urate of ammonia, though usually acid, is "occasionally neutral, or even alkaline."

The deposit, in the above cases, was in one instance associated with albumen, in one with uric acid, and in one, as already mentioned, with phosphates.

As to the accompanying symptoms, it happened that the pulse was rapid in only four out of the eleven cases observed; in the remaining seven it was either moderate, or, as in one instance, slow. The *skin* was hot, warm, warm and dryish, cool, dry, and warm and moist. There is, evidently, no approach to uniformity in this respect. In two instances the skin and tongue are both noticed as natural. With regard to the state of the bowels, pain, mental con-

dition, &c., there was a similar variety. Something more definite, however, can be said of the nutrition, since in five of the cases there was strongly-marked emaciation, and in none of them was the nutritive function in an absolutely healthy condition. This is considered as a very important circumstance by Golding Bird, who places at the head of his list of causes of this deposit a "waste of tissue, more rapid than the supply of nitrogenized food;" evidently supposing that the wasted tissues actually appear in the urine under the form of urate of ammonia. This opinion, however, must still be regarded as somewhat theoretical; particularly since so great an authority as Simon entertains a different idea with regard to the signification of urea and uric acid.

On the whole, the most constant symptom in the above cases seems to have been a disturbance, more or less marked, of the functions of the stomach. In seven instances, the appetite was either very poor, or altogether wanting; in one it was diminished; in two it was not reported, and in one it is stated as good. In three cases there was frequent and obstinate vomiting, so continuous and troublesome as to form a prominent feature in the case.

Those cases in which the deposit was most remarkable for appearance and quantity, and most continuous, were four. In another instance, one of advanced phthisis, it was strongly coloured and very abundant, and probably also continuous; but as I had an opportunity of observing it only once, we cannot be certain with regard to the last. The first of the above mentioned four cases was that of a man who had an encephaloid testicle removed at the Massachusetts General Hospital, Dec. 18th, 1847, while presenting nearly or quite a healthy external appearance. His health, which had suffered somewhat before, immediately began to fail rapidly, and he lost flesh and strength daily. His urine, soon after the operation, was observed to become turbid after standing, though clear when first passed. It was diminished in quantity, averaging Oj , or a little over in the twenty-four hours, always acid, and of a high density, varying from 1027 to 1030. It habitually deposited a copious precipitate of bright red urate of ammonia. At the same time there was rapid emaciation and loss of strength, failure of appetite, and much pain in the back and abdomen, where the encephaloid disease was evidently invading the internal organs. He died just four weeks after the operation, having been reduced in that time to the last degree of emaciation and cachexia. The abdominal organs in general were found extensively occupied by encephaloid disease, but the kidneys were healthy. (In the pelvis of the right kidney, which was dilated in consequence of pressure on the ureter by a cancerous mass below, were several oxalate of lime calculi.)

The second case was also one of cancer. It was that of a woman who had had a scirrhus breast removed by operation three months previously, and who was at the time suffering from well-marked cachexia and general invasion of the malignant disease. Emaciation was well-marked, though not rapid; much pain in various parts of the body, skin dry, bowels costive, appetite

poor, much thirst, and frequent attacks of obstinate vomiting. Here the deposit was white, and associated with uric acid. In this instance, also, the kidneys were found natural, though almost all the other organs, and even many of the bones, were affected with cancerous disease.

In the third case, that of Bridget Shea, a patient with scrofulous disease of the tarsal bones, there was no emaciation, loss of appetite, or febrile action; but great nervous irritability, with some symptoms of an hysterical character. Here, also, there was frequent vomiting, without any very evident cause. The patient would vomit two or three times every day—occasionally so many as six times of a morning, the appetite meanwhile remaining good. The urine in this instance was scanty and dense, and the deposit red, and sufficiently copious.

The fourth case was that of an Irishman, whose physical and rational signs were such as to leave no doubt that he died of scirrhus of the pylorus, though no autopsy was made. This patient was much emaciated, with a dry skin, moderate pulse, looseness of the bowels, little or no appetite, and much distress at the epigastrium. The vomiting, as might be inferred from the diagnosis, was incessant and uncontrollable. The deposit in his case was red and copious, and appeared habitually during a considerable period of time.

One would be inclined, from a review of these cases, to associate the deposit of urate of ammonia rather with derangement of the stomach than with any other particular disorder. The frequent connection of these two is, indeed, acknowledged by nearly all the writers on the subject. Dr. Bird, among the five circumstances, which he enumerates as liable to give rise to the deposit, mentions failure of the digestive organs to assimilate nitrogenized food. Prout speaks of errors in diet, and all irregularities calculated to interfere with digestion, as liable to produce it; and mentions particularly the fact that the presence of febrile action is not, by any means, essential. He expresses the opinion that the organs of digestion and assimilation are, somehow or other, concerned in the appearance of these sediments; but acknowledges that, with respect to the immediate nature of these derangements, we still have no very distinct knowledge.

Dr. Prout, however, is here speaking more particularly of the white or yellowish variety. The red, he considers, in common with most other authors, as almost necessarily connected with febrile excitement. Still, as already mentioned, though we cannot doubt this opinion to be correct as a general rule, yet the immediate cause of the deposit, even here, may not be the febrile excitement itself, but the gastric disturbance which accompanies it. The case of Bridget Shea, who had absolutely no febrile action, but much hysterical irritability and frequent vomiting, seems to favour this idea. Becquerel himself mentions, with regard to hysteria, that the urine, instead of being copious and limpid, is sometimes scanty, dense, and sedimentary. Of these exceptional cases he reports two; in one of which there existed a "slight febrile movement;" and in the other, the hysterical attack, as he states, was accom-

panied by "gastralgia." (*Sémiotique des Urines*, p. 370.) The connection, therefore, between urate of ammonia and gastric derangement appears to be well worth more particular attention, though it cannot, at present, be considered as definitely established.

Iodine.—The next subject to be noticed is the appearance of iodine in the urine of patients who are taking it in medicinal doses. That this substance does so appear is well known; and the fact is mentioned by Becquerel, Berzelius, Simon, and Christison. Becquerel comes to the conclusion that it appears in the urine constantly, whenever taken into the system, and that its presence is very easily detected. The method which he adopts is to mix with the urine an emulsion of starch, and add to the mixture chlorate of potass and sulphuric acid; by which process chlorine is set free by the sulphuric acid, and, liberating the iodine from its combinations, allows it to strike the characteristic blue colour with starch. Christison recommends the addition of chlorine by allowing it to descend, in a gaseous form, from the mouth of a bottle containing nitro-muriatic acid. In ordinary cases, however, the admixture of starch with the urine, followed by a drop or two of nitric acid, to set free the iodine, will be found sufficient.

I have observed the appearance of iodine in the urine in seven cases, and in many of them it was detected at the same time in the saliva. In order to determine the time which is necessary for iodine to appear in the urine, the following experiments were instituted. On the 21st of February, at 5 P. M., I took half a drachm of the syrup of the iodide of iron, and examined the urine afterward, at intervals of ten minutes. The portions passed at ten and twenty minutes past five showed no indication of iodine; but at half past five a strong purple colour was produced by the addition of starch and nitric acid. This reaction continued throughout the evening, and urine passed at seven the next morning struck a deep indigo with the same reagents. At 9 A. M., the colour was less marked; and from this time it continued to grow fainter and fainter, till forty minutes past 4 P. M., nearly twenty-four hours from the time of taking the medicine, after which no further reaction was perceptible.

The next observation was made with regard to the accumulation of iodine in the system, and the time necessary for eliminating a large quantity. Two patients in the Massachusetts General Hospital had been taking iodide of potassium, one for six, the other for eight weeks. During the greater part of this time, they both took the medicine to the amount of one drachm per day. On the 24th of February, the medicine was omitted for each. The urine of both patients at this time gave a nearly black colour, with starch and nitric acid. It was then examined every twelve hours, soon after being passed. In seventy-two hours the colour produced was very faint, so that in one case it was doubtful whether it existed or not; and in the other it was

distinct on first dropping in the nitric acid, but disappeared by agitation. In twelve hours more, all trace of iodine had disappeared from both specimens.

From these, and other observations, may be deduced the following conclusions :—

I. After a single moderate dose, iodine may appear in the urine in so short a time as thirty minutes, and continue to appear for nearly twenty-four hours afterwards.

II. After a much larger dose, taken habitually for a long period, the time necessary for complete elimination is not proportionally increased.

III. It is therefore probable that iodine, or at least, iodide of potassium, does not accumulate in the system in any considerable quantity; and it is questionable whether a large dose, taken habitually, produces any more constitutional effect than a moderate one, since the superfluity is constantly removed by the kidneys.

IV. The colour, produced by the reaction of starch with urine containing iodine, varies, according to circumstances, from a light purple, slaty-blue, or French gray, to deep indigo, or absolute black.

V. A solution of iodide of potassium in distilled water, in the proportion of one-eighth of a grain to the ounce, produces, with starch and nitric acid, an opaque black colour, as strong as is ever observed in urine. A solution in the proportion of one-sixteenth of a grain to the ounce produces a strong purple, moderately translucent.

VI. It is therefore probable that iodide is often excreted in the urine in about as large a quantity as one-tenth of a grain to the ounce; since one-eighth of a grain of iodide of potassium contains nearly one-tenth of a grain of iodine.

The fact stated in the third proposition, viz., that iodine does not accumulate in the system to any great extent, is corroborated by the opinion of Becquerel, who states (*Sémiotique des Urines*, p. 128), that “when its use is continued, and particularly when the patient begins to be *saturated* with it, its passage is very abundant, and a large proportion of the iodine introduced into the system is eliminated through the urinary passages.” The appearance of an eruption of acne about the face may, perhaps, be considered as an indication that this point of saturation has been reached; and it is thought that this effect will, in general, be produced by giving the medicine in doses amounting to about half a drachm per day.

With regard to the rapid elimination of iodine, even after it has been given in large doses and for a long time, there is an experiment related by Dr. O'Shaughnessy which might seem to weigh against this supposition. The instance was that of a dog, poisoned with iodine, in whom the poison was detected in the urine so late as the fifth day, though only one dose had been given. The drug was administered, however, in this instance, in the form of solid iodine, and in the quantity of one drachm; so that it is possible a part of it remained in the alimentary passages for a day or two, without being absorbed, and in this way had the effect of repeated doses.

As already mentioned, iodine is usually perceptible in the saliva at the same time that it appears in the urine ; but it does not always exist in these two secretions in the same proportions. Thus, in one instance, the urine showed only a faint purplish colour by the reagents, while the saliva exhibited a strong blue. The same or even greater irregularity was observed by Dr. O'Shaughnessy in the case of the dog above referred to, since the poison was abundant in the saliva on the third day, but could not be detected in the urine : on the fourth and fifth days, however, it again appeared in the latter excretion. Becquerel (p. 128) speaks particularly of these occasional variations, and acknowledges that we cannot, at present, refer them to any fixed law.

Hydrocele.—I have had the opportunity of examining the fluid of ten hydroceles. The age of the patients varied from twenty-four to sixty years. The amount of fluid varied from three to seventeen and a half ounces. The average amount of fluid was a little over eleven ounces. It was generally clear, and of a yellow, greenish-yellow, or decidedly greenish colour. It was neutral in three cases, alkaline in seven. Its specific gravity varied from 1017 to 1035; the average being 1024.5. In every instance the fluid was strongly albuminous, often becoming quite solid and opaque by the action of heat. In one instance it also contained an abundance of cholesterin, in the form of small crystalline plates, which, floating about in the fluid, and glittering in the light, had to the naked eye the appearance of oil-globules. The fluid of this hydrocele was alkaline, rather large in quantity (3xviiss), and of unusually high density (1035); but it presented no other peculiarity. The subject was a large, heavy man, with a dark complexion, rather muscular than fat, about thirty years of age, and in good health. The fluid had been accumulating for four years.

Simon has given the analysis of the fluid of a hydrocele which also contained cholesterin. It was of a yellow colour, without odour, alkaline, and sparkled when shaken, in the same manner as the above. It was also, like the above, remarkable for its density, containing fourteen per cent. of solid ingredient, which, Simon says, is a larger proportion than he has ever observed in any other serous fluid of a similar nature. He reports, also, five other analyses, extracted from various authors. In all these cases, the fluid was albuminous, and, in most of them, alkaline.

Gall-stones.—I have also to present to the society several specimens of biliary calculi. The first may be considered as a fair type of the most ordinary kind of gall-stones; consisting principally of cholesterin, with more or less colouring matter, and a minute quantity of calcareous salts. They are, as you see, nearly similar to each other in appearance, of a yellowish-brown colour; one to five-eighths of an inch in diameter, polygonal in shape, with smooth, roundish facets, separated from each other by blunt edges. Their weight varies from one-eighth of a grain to twelve grains. They are lighter than water.

Before the blowpipe, they fuse readily and inflame, burning with a yellow flame until they are almost entirely consumed, leaving a minute quantity of alkaline ash.

When broken open they are seen to consist, 1st, of an outer, thin, brownish, brittle layer, under which is another very thin layer of pearly-white laminae (cholesterin). Then comes what composes the greater part of the calculus, viz., a softish substance, of a dull, yellow colour, crystallized in fine needles or fibres, which are collected into cones. The apices of these cones project into a central cavity, the walls of which are stained of a dark brown colour, and sprinkled with small, white, shining flakes, probably pure cholesterin.

The frequent occurrence of a central cavity in gall-stones has been pointed out by Vogel, who attributes it to the drying and shrivelling up of a mass of mucus and colouring matter, which at first constituted a nucleus.

The above gall-stones were all taken from the body of a woman who died in consequence of perforation of the gall-duct. Several calculi had passed through into the intestine; but one, of rather a large size, became obstructed in the duct, and produced ulceration and perforation of its walls, and extravasation of bile into the peritoneal cavity.

The specimens in the next collection are similar to the foregoing as regards their composition. They are remarkable principally for having among them many perfectly formed calculi of minute size.

The next calculus consists almost entirely of cholesterin, with only a very small amount of colouring matter and salts. When whole, it was about the size of a large walnut, and weighed one hundred and thirty-three grains. It is irregularly roundish in shape, with two or three ill-defined facets. It is white and brown externally, with a smooth, unctuous feel. It is readily inflammable, and leaves hardly any appreciable residue. It breaks readily, and exhibits internally, in a well-marked manner, the peculiar structure, partly laminated and partly radiated, which belongs to this kind of calculus. It is of a stone-yellow, mixed with white, internally, and presents, in various parts, sparkling crystals of pure cholesterin.

This calculus made its way through the abdominal walls by ulceration, and was presented to me by the patient herself, who survived the accident. She was a healthy-looking woman, between fifty and sixty years of age. She gave the following account of the case. An abscess first showed itself just at the right of the umbilicus, and shortly opened spontaneously. Five months afterward, the first gall-stone was discharged. The fistula then remained open for six years, at the end of which time the second gall-stone came away, and after that the sinus readily healed. It was this second calculus which was presented for examination.

The fourth specimen is of a darker colour. It has a small, roundish nucleus, apparently of colouring matter, lying loose in the central cavity. This stone resembles the others in composition.

The calculi in the last collection are somewhat remarkable, both for their physical and chemical properties. They were taken from the gall-bladder of a healthy-looking man who died of collapse after a severe accident. They were very numerous, and these are but a small part of what the gall-bladder contained. They are small, irregularly nodulated and jagged in shape, dark greenish externally, with a smooth, glazed appearance. They are hard and brittle. Internally, black and lustrous, with a fracture like that of anthracite coal. They are tasteless, and heavier than water. They are sparingly soluble in boiling water, alcohol, and spirit, but communicate to these fluids a light yellowish tinge. They dissolve freely in boiling potass, with a dark brown colour; and the addition of nitric acid to the alkaline solution produces, after a short time, a precipitate of green flocculi (biliverdin).

Before the blowpipe, the calculus is partially consumed, burning with a yellow flame and an animal odor; at the same time undergoing an imperfect fusion. It then remains as a grayish-white, friable mass, which produces a brown stain on moistened turmeric paper. The fresh specimen effervesces feebly with muriatic acid, but is unaffected by acetic acid; after incineration, however, muriatic acid produces brisk effervescence, turning the ash of a black colour, and evolving an odor like sulphuretted hydrogen. It appears, therefore, to be principally composed of phosphate, with a little carbonate of lime, and a modified form of bile-pigment.

I have not been able to find in any author an exact description of these calculi. Vogel mentions a modification of biliphæin which has a "dark brown, almost black colour," as an occasional constituent of gall-stones; and speaks of a variety of calculus composed almost entirely of this substance, which has, moreover, a "mulberry-like" appearance, similar to the present. These, however, though almost black, have a decided greenish tinge, and do not approach to brown. As Vogel supposes the calculi he mentions contain a peculiar modification of the colouring matter, these are probably a variety of the same species.

ART. V.—*Case of Extra-Uterine Foetation*. By WM. DENNY, M. D., of Ellicott's Mills, Howard District, Anne Arundel county, Md.

In the middle of September, 1840, the subject of the following case, then æt. twenty years, was delivered of a healthy male child, at full time, after a natural labour. Her getting-up was unsatisfactory and protracted; and becoming myself shortly after confined to my house by serious indisposition for several months, she passed into the care of another practitioner. In the course of the winter, it was reported to me that she was considered to be threatened with prolapsus uteri.

Four or five years after, having in the meantime regained an appearance of

high health and very considerable embonpoint, she became liable to paroxysms of abdominal pain, with distension of the colon and torpidity of the bowels; which attacks I was enabled to relieve from time to time by means of anodynes and mild but efficient purgatives. A year or two later, she occasionally took opiates of her own accord, upon the accession of the paroxysms, sometimes in injudicious doses, as by the time I could reach her, she presented symptoms traceable to the opiate itself.

In the summer of 1848, as I learned afterwards, she had some anomalous symptoms, believed at first to be attributable to a suspension of the catamenia, previously regular. Passing some time in Baltimore, she was leeches upon the os uteri several times, when, at length, it became the opinion of her medical adviser there, as well as herself, that conception had taken place. I saw her for the first time under these circumstances, on the 28th of October, 1848, when some of the preceding facts were communicated to me. She also stated that she had not menstruated since the month of April, had quickened about two weeks before my visit, and was now about the end of the fifth month of utero-gestation. The enlargement of her abdomen seemed to corroborate the fact of the pregnancy, as well as the stage to which it was said to have advanced.

From that period until the last of the succeeding January, she was more or less constantly sensible of movements within her. She described her sensations as identical with those experienced in the last half of her former pregnancy, and was confident they arose from foetal motion. Upon one occasion, she called my attention to these movements, and laying my hand upon her abdomen, over her dress, I felt the shock of foetal turbulence so unequivocally that, although I had abundant opportunities afterwards, I felt indifferent to repeat the examination.

At another time, I applied the stethoscope, also over her dress, failed to recognize the pulsations of the foetal heart, but heard what I considered to be the bruit de soufflet, clearly pronounced, abruptly terminating at a defined line upon the abdomen.

From the time I first saw her, till the last of January, 1849, her abdomen enlarged at the rate, and with the characters, of normal pregnancy. When the movements spoken of were no longer felt, the growth of the abdomen came to a stand. A sensation of "rolling" motion succeeded, particularly upon her turning from side to side in bed. "Her breasts had been full of milk all winter," but soon after, the lactation receded.

In November and during the two succeeding months, the paroxysms of abdominal pain returned. They were relieved by anodynes, laxatives, and external relaxants. About the middle of November, being desirous of ascertaining whether there were present any threats of premature delivery, I proposed an examination per vaginam. This was readily assented to, with the emphatic declaration, however, that "these pains are in the bowels, and not in the womb."

Bounding the upper part of the vagina, my finger encountered a segment of a globular tumour, whose shape, taken in connection with that which could easily be made out, through the abdominal walls, proved it to be larger in diameter than the brim of the pelvis. It rested upon the brim, and although pressed down by a persistent force, was not impacted therein. It only so far protruded through the brim as its spheroidal figure differed from a plane. I could perceive no alternating impulse like parturient effort. I fancied I could feel, through some thickness of interjacent tissue, the form and firmness of a foetal head; but so indistinctly then, and so much more so at subsequent

examinations, that I could lay no stress upon the sensation. But the os tinæ was not in situ. Extending my exploration upwards and backwards, the finger became embarrassed, not by any portion of the tumour, but by an advance of the posterior wall of the vagina, in a curve from the pubic aspect of the rectum, towards the centre of the strait of a large radius, in place of the cul-de-sac found there ordinarily. Certain that no os uteri existed, centrally, laterally, or posteriorly, I was about to extend my search to the point where alone it might be found, viz., high and close behind the ossa pubis, but was obliged to desist, then as well as afterwards, in consequence of tenderness to the touch complained of in that quarter.

No further incident is now recollected till the 30th of March. She then stated to me that, having had a discharge of bloody mucus for some twenty-four or thirty-six hours, pains had come on, differing from those from which she had so frequently suffered, that these were alternated with intervals of quiescence; she believed them to be uterine and not intestinal, and she was confident that her labour was at hand; nevertheless, as her pains were as yet slight, I might retire to another apartment for the present till I should be wanted. At daylight in the morning I returned, of my own accord, to her chamber, when her attendants reported that there had been no exacerbation of the pains through the night, that they had worn off about two hours before, since which time she had been quietly asleep.

On the first of May, she removed to Baltimore, where I visited her in company with her medical attendant there, on the 19th of June. She looked thin and leucophlegmatic, but her general health was said to be unimpaired. She informed me that about a week before my visit, there had occurred a sanguineous discharge from the vagina, lasting three or four days, ceasing without active interference, producing but little debility, and no sympathetic inconvenience. My friend Dr. — told me that he had succeeded in finding the os uteri, high behind the symphysis pubis, and had also heard the placental souffle through the stethoscope.

I saw her again upon the 16th of August, much altered for the worse. She was much more emaciated, and I found her in bed. Within ten days preceding, another flow from the vagina had come on, longer continued and more profuse than before, weakening her materially, and giving rise to constitutional disturbance.* Her abdominal pains had recurred, for which she had to resort to large and frequently repeated doses of morphia. On the day before my visit, she had been affected with hysterical delirium, whether from the morphia or not, I was unable to determine. Both the flow from the vagina and the aberration of mind had now, however, ceased. I made another examination into the interior of the pelvis, laying my other hand upon the bare abdomen.

The organs therein were in statu quo. I succeeded in reaching the os uteri, situated between the tumour and the pubes. It presented, not the rounded, dimple-like opening of the gravid uterus at term, but a transverse slit, like the mouth of the undeveloped womb, flattened by the compression to which it was subjected. A sudden impulse impressed upon the presentation through the strait was clearly communicated to the other hand, on the surface of the abdomen. There was some irregularity in the resistance of the tumour through the abdominal walls, but the shape of the body and limbs of a fœtus could not be made out.

* The interval between these two occurrences of discharge was nearly eight weeks, i. e., two catamenial periods. I believed them to be truly menstrual, and subsequently ascertained that such was the opinion of the patient, without, as far as I know, any such suggestion having been made to her.

In the meantime, she was desirous of obtaining further counsel upon her case. Accordingly, on the 14th of July, 1849, I furnished her with a letter, giving an outline history of what had passed under my observation, and expressing the opinion I had formed during the preceding winter, that the lady was the subject of extra-uterine foetation. I had confidently communicated that opinion to more than one medical friend as far back as the first of February.

In a reply, dated July 21st, it was stated "that no positive conclusions can be arrived at beyond this, viz., that the tumour which distends the abdomen is the womb; that no physical signs of pregnancy can be detected; that the history of the case" (partly given by myself and partly derived from another source) "leads to the inference, that the womb is occupied with a mass of material, consisting of altered tubular or deciduous coat of the organ." This inference was confessedly conjectural, as the case was considered very obscure.

This view of the matter placed me under exceeding embarrassment. I gave the communication the attentive and respectful consideration due to the distinguished source from which it emanated; I took a resurvey of the circumstances of the case, with all the caution and non-committal I could command, and found myself unable to discover any difficulties in its diagnosis, and more strongly convinced of my first formed opinion.

Mrs. ——— returned to reside in my neighbourhood, and came again under my charge. Her general health seemed so much deteriorated that I had now no doubt that new light would ere long be thrown upon the supposed obscurity of the case.

Though, perhaps, somewhat irregular, I will here transcribe the reasons which would not allow me to abandon my conclusions as to the character of the case.

We have in it, suspension of the menses after April, 1848; quickening in October; foetal motion, relied on by the patient, and clearly recognized by myself; the placental bruit; the normal growth of the abdomen, for three or four months; arrest of that growth concomitantly with the cessation of motion; lactation; and, finally, a simulated or pseudo-labour.

These circumstances are incomplete as the history of pregnancy, in that, 1st. I failed to hear the foetal circulation; 2d. I did not elicit fluctuation of the amniotic fluid, or the ballottement of the foetus; 3d. The bruit de soufflet is not established to be placental; 4th. Females and accoucheurs have both been mistaken by abdominal movements, in pronouncing upon the existence of pregnancy and a living foetus; 5th. At the middle of July, 1849, no physical signs of pregnancy could be detected, by gentlemen pre-eminent for obstetrical experience, save only the mere enlargement of the abdomen.

1st. In order to detect the pulsations of the foetal heart, the distal end of the stethoscope should be approximated to the thorax of the foetus, with solid tissues only intervening. The tic tac is said to be a feeble sound, resembling the ticking of a watch heard through one's pillow at night.* The ear of the auscultator should be acute and well trained,† and the instrument ought to rest upon the bare abdomen.‡

Now there are certain cases in which the face of the foetus looks towards the pubis. In such, its chest and abdomen present their front to that space on the body of the mother where alone we can avail ourselves of the means

* Velpeau, see *Signs of Pregnancy*, Cyc. Pract. Med.

† Ivory Kennedy, see *Colombat de l'Î-ère*, Meigs' edition, p. 570.

‡ Dr. Walker's edition of *Denman's Midwifery*.

of exploration. Its limbs being gathered up in front, their interstices filled with the liquor amnii, must prevent the contact we need for success.

In other positions, though the thorax of the foetus will be in contact with the abdominal walls of the female at one moment, yet floating freely amidst the fluid of the amnion, it may frequently change its position, as far as that contact is concerned. Much assiduity is, therefore, required, to catch the favorable time and place for the recognition of this sign. If the bruit de cœur be once made out, then there exists pregnancy, and a living foetus; but, from the fact that stethoscopic sounds are occasionally inaudible, even in the case of a living and healthy foetus, it does not justify a negative opinion.* I consider myself no proficient as an auscultator in thoracic affections. I had never used the stethoscope obstetrically before. I applied the instrument over the patient's dress, and probably with but little industry in the exploration.

2d. The fluctuation of the amniotic fluid, and the ballottement of the foetus, can be best observed between the end of the fourth and the commencement of the seventh month of gestation.† These signs will depend, altogether, upon the preservation of relative proportion in the quantity of the fluid to the bulk of the foetus. Now, in one case, there may be but one or two ounces of fluid, in another, as many pounds.‡ An infant at term has weighed only five pounds, and another fourteen.

Under these varieties in the quantity of the fluid and the bulk of the foetus, it must often happen that fluctuation and ballottement cannot be elicited. The examination should be made in the erect posture.

Now the patient in this case, though examined about the middle of the sixth month of pregnancy, was recumbent; was at the time suffering abdominal pain, the abdominal muscles under tonic contraction, by which the tumour was jammed down upon the brim of the pelvis sufficiently to mask both fluctuation and ballottement.

3d. The bruit de soufflet has been considered to be caused by the rush of blood through the arteries of the part where the placenta is implanted. Moreau seems to refer it to abnormal sound generated in the aorta and its principal branches, altered and diminished in their calibre by the pressure of any tumour capable of conveying sound more readily than the mass of the abdominal viscera. It is quite probable the latter explanation is correct.

4th. I am aware that females are sometimes confident of having felt foetal motion, when their sensations have arisen from other causes than pregnancy; I am aware, also, that accoucheurs of much more tact and discrimination than I can lay claim to, have interpreted certain obscure movements as foetal, and have afterwards confessed themselves mistaken. But such mistake can only occur where the sign itself is confused. Now, if the shock of foetal turbulence strikes the hand of an observer accustomed to receive it, unequivocally, he has the right to rate this sign as strongly diagnostic of pregnancy and a living foetus as if he counted the pulsations of the foetal heart. When this fact becomes a portion of history, communicated to another practitioner, although it may not be unfair, or reflect upon his discrimination, to be told that he may be mistaken as others have been before him, it seems too much that he should be expected to give up his belief in his own sensations.

5th. Two and a half months after the probable death of the foetus, and three and a half after the simulated labour, there cannot be detected any physical signs of pregnancy, save only the local intumescence.

* Signs of Pregnancy, Cyc. Pract. Med.; London edition, v. iii. p. 484.

† Ibid, p. 483.

‡ Moreau.

By the term pregnancy, I understand a process in the human female, limited in duration to about nine calendar months. At the end of this period, for the most part, delivery ensues. But by reason of a faulty location of the product of conception, upon some other surface than the interior of the womb, impossibilities to delivery may be established. Although, in such cases, that product may remain for months or years, enclosed within the abdominal cavity of the female, yet the relations of pregnancy no longer exist, the ovum becoming classified among dead and foreign bodies, accidentally introduced amidst living organs.

In extra-uterine pregnancy, nature seems blind to her own mistake. The interior of the uterus becomes lined with decidua; the organ itself is developed to twice or thrice its former volume; the surface of the tissue, to which the ovum is attached, takes on the functions of the inner surface of the womb; vessels are multiplied and enlarged in the vicinity of the placental adhesion, and the arrangement of the capillary loops of both the maternal and foetal circulatory apparatus is most probably not dissimilar to that which is established in normal pregnancy. The mammary glands prepare to furnish nutriment for a foetus which can never see the light, and finally the vagina becomes lubricated, and the contractile tissue of the uterus exerts parturient efforts.

Now, perhaps, for the first time, nature awakes to her error. The contractions of the uterus necessarily fail of their object, and soon subside. If alive to this period, the foetus perishes, it being impossible for foetal life to be protracted beyond the full term of utero-gestation. The vascular apparatus, hitherto assiduously preserved, by which the elements of nutrition and growth had been transferred from the maternal to the foetal system, now becomes obliterated. The fluids of the ovum are in progress of absorption. The ovum becomes enveloped in a cyst or shell (sometimes found ossified after a long period), not unlike the encasement of areolar tissue surrounding a leaden bullet, accidentally lodged in the flesh, and for the same object, viz., to protect the sensitive structure from the too immediate contact of a foreign or dead substance. Lactation may continue or recede, but the organs recently developed by the law of gestation, in reference to parturition, assume a retrograde process towards the unimpregnated state; and so perfectly is this sometimes attained that women have been known again to menstruate regularly, nay, have even conceived and borne other children.

Under such circumstances, the female has no more right to present the physical signs of pregnancy, except an enlargement of the abdomen, than if she had been duly delivered, five and a half or three and a half months before. If, at such interval, the absence of such signs contradicts the existence of pregnancy in the case of Mrs. —, it would equally contradict it in every case of extra-uterine foetation that has ever occurred since child-bearing was a process of the human female.

With these apologies for the defective items in one case, I consider the following corollary established.

The history of Mrs. —'s case is the history of pregnancy.

It may be seen that I have not urged my impressions of having made out the head of a foetus, in my examination in November, 1848. I have not, 1st, because those impressions were too indistinct to bring them in as an argument; 2d, because they were not confirmed by subsequent examinations; 3d, and especially because all the information derived from the exploration of the interior of the pelvis belongs to the support of a second corollary.

If it were stated of a woman, whose uterus was developed to the size it

attains at a period just anterior to quickening, whether occupied by an ovum or an amorphous mass, that her os tinæ was to be found high and close behind the symphysis pubis, we should be led to infer that the body and fundus of the womb were alone enlarged, that the enlargement would be nearly globular (the whole womb being gourd-shaped), that the organ would be contained in the cavity of the pelvis, its fundus directed towards the sacrum, below the promontory of that bone; in other words, we should consider it a case of retroversion of the womb. At the stage spoken of, whether slowly or suddenly induced, there could not fail soon to happen, impaction from the increasing mass within its limited bony confines, embarrassment of the office of the rectum from the compression, but more than all, occlusion of the neck, and overfilling of the cavity of the urinary bladder. Those who have witnessed, those, especially, who have experienced personally this last affection, can appreciate the sufferings arising from it. But there is not only distress, but also danger from retroverted uterus. Denman regarded this displacement to be secondary to some failure in the timely evacuation of the bladder, and accordingly recommended relief to the latter organ, leaving the uterus to rectify itself. Other authors, with more reason, give us instruction, besides the use of the catheter, to institute such manual assistance as shall lift up the fundus of the womb, cause the organ to retrace the steps of its displacement, and undergo a sort of artificial quickening. The re-adjustment of the position of the fundus uteri necessarily restores the os and cervix to their normal site. If proper care be taken afterwards, for a short period, the progressive growth of the uterine tumour will prevent a subsequent retroversion and re-descent, simply because it soon acquires a diameter larger than that of the superior strait.*

Now, anterior to the quickening in the case before us, no complaint was made of impaction, of difficult defecation, of retention of urine, and therefore it is fair to infer that there had been no retroversion. But, if there had, when the abnormal position of the os uteri was discovered in the middle of November, 1848, the abdominal tumour was not only above the brim of the pelvis, but was too large to descend below it. From that point of time the development progressed, till, to the eye and hand, it presented the character of the gravid uterus at term, whose volume is such that the vertical axis is from ten to twelve, the antero-posterior seven to eight, the transverse, on a level with the insertion of the tubes, nine inches.† The whole womb, from being gourd-shaped, ultimately becomes ovoid. The vertical diameter, or axis, extends from the os uteri to the middle of the fundus. It occupies nearly the position of the axis of the superior strait. Now, the ovoid, standing with its axis at right angles to the plane of the strait, its anterior face jutting normally against the parietes of the abdomen, and a fundus being recognized at some elevated point above the umbilicus, if the os uteri be found, under such circumstances, between the tumour and the pubes, without congenital mal-conformation, known not to exist in the present case, it is mechanically impossible that the tumour which distended Mrs. —'s abdomen could be the womb. The intumescence being distinct from the womb, and having been proved to be caused by an ovum, that ovum is exterior to the cavity of the

* Upon a passage in Colombat, in which the author enumerates retroversion among the accidents of the later periods of pregnancy, his able American translator and commentator remarks, that retroversion should not have been placed on this list, because towards the close of pregnancy, it is impossible.—Op. cit. p. 36.

† Moreau.

womb, or, in the words of my second corollary, the ovum of this pregnancy is extra-uterine.*

If the points embraced in the foregoing corollaries are established, what is the relative position of the ovum to the womb? Having never before, in the course of more than thirty years' engagement in obstetrical practice, amidst a dense population, met with a case of extra-uterine gestation, and ignorant of any classification of the varieties of that which is ventral, partly, perhaps, because of the absence of authorities from within my reach, I reflected that the situation of the cervix and os uteri being similar to that which exists in retroversion, in which the uterus revolves from the vertical to the horizontal position, upon an axis in its cervix, while the other elements in that displacement do not present in the case before us, I assumed, as a fact, that the vaginal support of the womb was a fixed point in the pelvis. Supposing the ovum to be located between the abdominal walls and the anterior aspect of the uterus, adherent extensively to the latter, its growth would press the organ downwards and backwards upon the superior strait, while the adhesions might drag upwards the os uteri where we had found it; they would likewise preserve the fundus in an approach to its normal upright position, out of the reach of ordinary manual exploration.

To leave this unfounded and perhaps absurd conjecture to stand as it did, at the point of time in the history of our case to which we had arrived at the commencement of these comments, let us now pursue the sequel of the history itself.

On the 30th of August, Mrs. — again became my patient. She was much more emaciated, her complexion was sallow, and her countenance careworn. She suffered greatly from abdominal pain, partly referred to the intestines, which were torpid, partly described as cramplike, running from her side to the pubis, and at one time as a sensation of something hard, pressing downwards within the pelvis. She was obliged to continue the use of large and repeated doses of morphia, with occasional laxatives interposed. She spoke of some hemorrhoidal sensations in the rectum, and some difficulty of urination, the latter always, however, surmounted. Her pulse was accelerated (being from 120 to 130 per minute), and small in volume. She had marked exacerbations of fever towards evening, followed by profuse sweats at night. The hectic aspect of the case, and the resulting dilapidation advanced, so that about the middle of September, she did not seem likely to survive many days. About the 20th, a free diarrhoea, along with much nausea, supervened, supposed to be caused by an error of diet, which wasted her flesh and strength

* In this bona fide transcript of the arguments which constrained me to dissent from the view of the case differing from my own, I was obliged to reason, in support of my second corollary, upon the facts, under the general principles of mechanical obstetrics, for there were no authorities to which I could conveniently appeal. I was aware that very many details of cases of extra-uterine pregnancy were scattered through the periodicals of the last thirty years, but I lacked the time, and possibly the industry, to wade through more than two hundred volumes of those journals, half of them still in pamphlet form, to find some analogy with the case before us.

Searching, afterwards, with an entirely different object, I met with an analytic review of "A Memoir on Extra Uterine Gestation, by Wm. Campbell, M. D., of King's College, Ed.," from which if I should quote all that seems parallel to the case of Mrs. —, I should swell this communication beyond what is already too much extended. Referring, therefore, to the number of the "Med.-Chir. Review," for July, 1840, p. 178 et seq., where the analysis may be found, I cannot forbear introducing the following remarkable sentences, viz: "When, after the presence of fetal movement cannot be questioned, the cervix uteri is found directed towards the pubis, so much elevated on the brim that it can be felt with difficulty, or cannot be reached at all, there need, generally speaking, be little doubt as to the presence of extra uterine gestation."—Op. cit. p. 177.

still more. In a day or two, however, the diarrhoea abated, when she informed me that there had come on a free, purulent, and highly offensive discharge from the vagina, along with which, on the first day of its occurrence, were some fragments of solid substance. With this discharge the hectic diminished materially. She had now so little pain as to dispense with her opiates, and her bowels became regular without medicine; her appetite, sleep and strength improved. The abdominal tumour was sensibly diminished. It was tympanic upon percussion, and no bruit de soufflet could be heard.

An examination per vaginam had been spoken of by herself, on the first day of her return to my neighbourhood, but postponed till she could become settled in her new home. When the more serious general symptoms presented themselves, I felt no disposition to press an examination, and after the discharge (the fetor of which was perceptible in the room), occurred, she was desirous of waiting till it should cease. The examination, therefore, became deferred till the 12th of October.

At my evening visit on that date, finding her suffering unusually with pain referred to the back part of the interior of the pelvis, I made an examination.

Beyond the sphincter vagina, the enlarged space commonly found seemed contracted, its mucous surface turgid and full. I could not pass the finger to the point where the os uteri had been formerly reached, not because of any closeness between the tumour and the pubis, but apparently from an adhesion of the sides of the vagina, just below the os uteri itself. The sphenoidal projection at the superior strait was perforated centrally, so as to admit the fore-finger freely. The ulcerated passage was smooth and broad, as to its anterior face, but posteriorly presented a cleft whose terminus I was unable to reach. The vertical measurement of the passage was at least seven-eighths of an inch. Above and beyond it, the finger came into immediate contact with the head of a foetus, the bone touched appearing stout, and impulse made upon it proving no disruption of the head itself to exist. Partly in consequence of the distance from the os externum, and partly from surrounding embarrassment to a free sweep with the finger, I did not make out any suture. In my efforts to do so, I peeled off a portion of soft parts from the bone, which coming away on the finger was examined, and found to be a fragment of scalp, upon which the hair appeared as mature and as thickly set as is usual in the majority of children at birth. At subsequent examinations, the length of the false passage was diminished, and a suture presenting considerable angularity occupied the cleft, now become somewhat divergent.

On one occasion, the discharge had stopped for some time, and much pain was complained of, when the examination was followed by relief from pain, with free discharge and audible accompaniment of flatus. Sometimes the abdomen was larger to the eye, at which time she would speak of a sense of distension, and then an evacuation of gas would lessen the enlargement, the discomfort, as well as the tympanic sound. About this time, the lower extremities became infiltrated, but the oedema again receded.

Towards the last of October, having complained for a week or more of numbness in the right upper extremity, there came on a sensation ascending from the hand to the shoulder, which, from its description and sequence, I took to be an aura epileptica. Involuntary twitches ran up the limb, and reaching the shoulder, the patient "became blind." This was her own account. Her friends stated that then she was thrown into "universal spasm with insensibility." I awaited the third and fourth paroxysms, and noticed that the precursory aura and local contractions, along with entire consciousness and a great deal of alarm, continued for ten or twelve minutes before the ter-

mination in a fully formed epileptic convulsion. Upon the following evening, she had four more such attacks, the interval between two of them being not more than one or two minutes. An episspastic being applied along the dorsal spine, and vesicating well, the convulsions ceased excepting that she had a slight one within the next twenty-four hours as she awoke in the night. For the two succeeding days, she was agitated all over, but especially in the right half of the body, with choreiform contractions affecting the features and speech, less than is usual in chorea itself. Any impression made on her mind modified this agitation, according as it tended to quiet or disturb her. The jactitation subsided during sleep, procured by full doses of black drop.

For a week or more she rallied considerably, but was again suddenly seized with a return of convulsion, ushered in with a piercing scream. Throughout that night, there was no complete cessation of the spasms, but remissions and exacerbations only. In the morning they wore off, when the choreiform movements recurred with the recovery of consciousness; and now it was discovered that the motor organs of the right side were paralyzed, the sensibility for the most part being entire. Her face was slightly distorted; the right cheek was benumbed, but the tongue was protruded without obliquity, and the speech and intellect were intact.

Her right leg and foot became œdematous; the partes muliebres and nates were reported to be raw and swollen, the one from the acrid discharge, the other from pressure added thereto. The next morning, after the announcement of the paralysis, the obliquity of the features disappeared; but the impairment of the motor agents of the limbs remained permanently unchanged.

For some two or three weeks before her death, cough with much expectoration became troublesome. The chest sounded well upon percussion, but no stethoscopic exploration was made, as it was not possible to make it full and satisfactory, from her inability to take or keep a convenient posture.

On the 15th of November, having once more slightly rallied, the epileptic paroxysms returned, and ceasing the next morning, she was left feeble, with considerable consciousness, and apparently without suffering, until the 18th, about 2 o'clock P. M., when she expired.

Autopsy, November 19th, 1849, 20 hours after death.—Present Drs. E. C. Alexander, Arthur Pue and myself. Weather moderately cool; corpse emaciated; countenance placid.

And incision was made in the linea alba, from just below the ensiform cartilage of the sternum to the left of the umbilicus, thence extending divergently to the middle of Poupart's ligament of either side. Left lateral flap slightly adherent to a smooth purplish tumour, occupying all the space exposed, except where bounded above by the large intestine. Upon the fundus of the tumour, there was either a portion of omentum void of fat, or pseudo-membrane, from which it could not be distinguished. The cyst being opened by a longitudinal incision, the body and limbs of a fœtus compactly situated were presented to view. The thickness of the cyst was about a line and a half. The skin and subjacent soft parts of the fœtus were so completely converted into adipocire as to resemble hogs' lard, into which the finger penetrated almost as easily. Upon lifting it out carefully, the head was found to have occupied the lowest region of the cyst, and at the termination of the funis umbilicalis, there was a small volume of shreds, the remains of the placenta, unadherent; but seeming to have occupied a point to the left of the upper and posterior region of the cavity.* I thought the fœtus felt heavier than its size

* If my designation of the point of placental attachment be correct, the bruit de soufflet heard by myself, and also by my friend Dr. ——— afterwards, must have made its

indicated. The anterior surface of the cyst was thickly smeared with adipocire, the detritus of the foetal integuments. The head was much altered from its normal shape, but whether from the commencement of disruption before removal, or in taking it out of and returning it to the abdomen, was not accurately noticed. The remains of a scrotum proved the foetus to be male. Its head was thickly coated also with adipocire, entirely masking from view the hairy scalp. I pointed out to my colleagues an abrasion, from which I had five weeks before removed a fragment of the scalp.

The medical gentlemen present with me concurred that the development of the foetus seemed mature. Its longitudinal measurement was not taken or estimated, as the body was not laid out at length. It was not weighed, but each of us formed an opinion on the subject, not expressed at the time. Upon inquiring afterwards, we differed somewhat; but the lowest supposition among us was that it would slightly overreach seven pounds.

The womb and its appendages lay anterior to the cyst, close upon the pubes. The former presented its unimpregnated volume, being from two and three-quarters to three inches long, about two broad, and something over one antero-posteriorly. These organs were sound and natural, excepting that a vesicle containing about f3j of yellow serum arose from the left ovary. The sacral aspect of the uterus was closely adjacent and adherent to the anterior wall of the cyst; but the ovaries and tubes were free. I opened the uterus from its fundus to the os tincæ. Its interior was healthy but dark-coloured, containing no decidua. If it might be flattened by the long continued compression to which it had been subjected, there existed no particular attenuation of either wall, these being each from four to five lines in thickness. No rent or cicatricial evidence that this had existed presented itself in the uterus or the cyst.

The most dependent part of the cavity was perforated through into the upper region of the vagina, through which the finger passed freely. I did not examine into the probability of adhesion in the vagina below the os uteri, in consequence of the presence of a member of the family at the dissection, as I was unwilling to expose the person of the corpse for that purpose, and I deemed the fact of minor importance.

Remarks.—The result of the autopsy having verified my diagnosis in the general, also exposed to me how unfounded had been my conjecture as to the relative position of the ovum to the womb. I have called that conjecture absurd as well as unfounded. Assuming that ventral pregnancies do occur primarily, the fecundated germ fails to enter the ostium abdominale of the Fallopian tube because the fimbriated extremity relaxes its grasp upon the ovary, and the accurate adaptation of the ostium to the ovisac at the point of its rupture is interfered with between the moment of impregnation and the transit of the ovule into the tube, the germ, therefore, necessarily becomes misplaced within the peritoneal sac, and the ovary being enclosed in the posterior duplicature

auscultatory track through the body of the foetus, rendering it unlikely that this sound can proceed from the causes to which it has been ascribed by Kegaradec, Kennedy, &c. Moreover, being heard as late as May or June, *i. e.*, one or two months subsequent to the simulated labour, strengthening the views of Bouillaud and Moreau, who trace it to the modified circulation on the maternal aorta and its branches. Montgomery, also, mentions one case of vascular sarcoma, and another of supposed enlargement of the spleen, when this sound was clear and distinct.—Cyc. Pract. Med., Art. Signs of Pregnancy.

of the broad ligament, it would seem impossible that the error loci should cause the ovum to be found upon the pubic aspect of the womb.

It was perfectly clear that, instead of that part of the vagina into which the cervix uteri is implanted being fixed in the pelvis, an ovum, or any other growing tumour, located behind the womb is competent to press forward the whole organ, along with the superior end of the vagina, and cause the os uteri to be recognized, where, during the lifetime of this patient, it had been so frequently found. I have now no manner of doubt that, had a careful supubal examination been made at the proper time, the outline of the fundus uteri might have been traced to distinguish the uterus from the abdominal tumour. The neglect in this instance is mine alone, as the proper time would have been either during the development of the organ and previous to the pseudo-labour, or after the extreme emaciation of the patient.

Besides this spontaneous call for comment by the autopsy itself, my attention has been drawn to another point, by a letter from a medical gentleman deservedly standing high both as a teacher and practitioner of obstetrics, containing some inquiries and suggestions to which it seems to me not improper here to reply.

My friend states "that he has entertained doubts of a perfect and great development of an ovum upon a placento-serous tissue, but that the post-mortem details of the above case are almost enough to cause him to abandon those doubts." Recurring, however, to a fact communicated to him during the lifetime of the patient, viz., that at the last of March she had pains and vaginal show, he asks, "Were these labour pains? Did the womb rupture at that period?"

It does not appear to me possible that rupture of the uterus could have occurred upon the occasion referred to; 1st. Because, when the earliest vaginal exploration was made, viz., in November, 1848, the os uteri must have been where it was subsequently reached, close and high behind the pubis. The dissection discloses it there in November, 1849. Why? Because the ovum was exterior and posterior to the womb. Now, to suppose that the pregnancy had been intra-uterine antecedently to the last of March, 1849, that among the events of the pseudo-parturition, the womb had been ruptured and extended the ovum from its cavity into the peritoneal sac, is to seek for a work of supererogation, as well as to leave the abnormal site of the os tincæ, made clear by the first examination, unaccounted for. The rationale of this faulty position of the os tincæ in November, 1849, must be the rationale of that in November, 1848.

2d. Rupture of the womb (an accident which has hitherto, happily, never come under my notice) is universally deemed a formidable, not to call it a fatal, incident in parturition. Intense shock to the constitution, along with external or internal hemorrhage, or both, has never failed to attend. The letter alluded to suggests, however, "that progressive attenuation of a part of the uterine parietes sometimes is set on foot during pregnancy, rendering rup-

ture an easy occurrence from the contractions of labour, that attenuation might proceed to such a degree as to cause the evidences of such an accident to be but slight." No doubt this may be somewhat true; but, although such circumstance might materially lessen the hemorrhage consequent upon such an event, would it lessen the shock? Does not this arise more from the sudden intrusion of the ovum, a quasi foreign mass, into the peritoneal cavity, unprepared for, and as it were not expecting it, than from the mere laceration of the womb itself?

The pains of the 30th of March were uterine and parturient. The patient stated them to be but slight. No exacerbation occurred during my absence from her chamber. They wore off in a few hours, without any sensation in the patient requiring me to be called up, and no hemorrhage of an external character accompanied.

3d. I examined the uterus and its appendages, as carefully as my limited anatomical knowledge permitted, and found no attenuation, no rent, no cicatrix, or sanguineous effusion. The ventral or abdominal extra-uterine location of the ovum must have been established ab origine, and there does not exist the smallest evidence that it occurred consecutive to a rupture of the uterus, the tubes, or the ovary.

Writers seem anxious to explain away cases of ventral pregnancy. They admit the ovular and tubular varieties of extra-uterine fœtation; in which cases the cyst, which at first serves the ovum in loco uteri, is supposed sometimes to rupture and throw it forth from its first location into the abdominal cavity, to form placental attachment where it may. To support this supposition they tell us that the rent through which the ovum escaped may have been overlooked at the autopsy. Now, although this is to substitute conjecture for proof, throwing the *onus probandi* on those who might be disposed to dispute their explanation, it is still a conjecture at variance with the suggested doubts of my friend—it being far easier to believe that the product of conception can establish a placental attachment when a minute fœcundated germ, than that, somewhat developed, it could be detached from its first connections, and then go forth to form a new implantation. But have not doubts of the capacity of a serous tissue to support an ovum been already cleared away?

Blundell says, "I have myself seen a fœtus, on the whole not imperfectly formed, about the size of six or seven months, and which was taken from a boy, where it lay in a sac in communication with the child's duodenum, the boy being pregnant. I cannot accede to the opinion advanced by some that it is impossible that a fœtus should form within the peritoneal sac among the viscera."

Mason Good, also, refers to a case, published in the *Med. Chir. Trans.*, vol. i. page 241, by Mr. Young, "where the nucleus of fœtal rudiments were found in the abdomen of a male infant about fifteen months old, well known, from personal inspection, to nearly all the medical practitioners of London;" probably the identical case mentioned by Blundell.

A number of cases of extra-uterine pregnancy, in which the placenta was found adherent to the peritoneum, are mentioned also in the work of Colombat de l'Isère, for the translation of, and additions to which, the American medical public stand under such enduring obligation to Professor C. D. Meigs, of Philadelphia.

ART. VI.—*Remarks on Obstetrical Forceps, with an attempt at their Improvement.* BY HENRY BOND, M.D. (With three wood-cuts.)

AT an early period of my professional life it occurred to me that obstetrical cases are sometimes, although not very frequently, met with where the use of the forceps is clearly indicated, but where the instrument is found defective. I refer to those cases where, owing to the position or the form of the foetal head, and its relation to the pelvis, it is found impracticable to adapt the clamps to the head so as to lock the branches, or to do so without violent injury to the mother or child. There is probably no obstetrician of large experience who could not furnish ample illustrations of this opinion, if he would give a full and faithful detail of his observations.

Systematic writers tell us that "we must feel the ear," or otherwise determine the precise situation of the head, and then the blades "must be placed exactly upon the parallel* sides of the head, so that they may lock—if the handles do not readily join upon the introduction of the second blade—then we must, by *judicious management* of the one in fault, make it join its fellow." We are directed to withdraw the blade in fault and introduce it again, as if that would certainly accomplish that exact adaptation. When the head is above the brim of the pelvis, where the use of the forceps is sometimes clearly indicated and urgently demanded, it is an empty pretence that we can always determine the exact position of the head, and not less so, that "judicious management" will always enable us to adapt the blades exactly to symmetrical portions of the head so as to lock readily. Dr. Blundell says, "they (the long forceps in such cases) are more generally laid over the forehead and occiput." See also Velpeau, sect. 1061.

I will here present, very briefly, a few illustrative cases. 1. In the early part of my practice, I was called to a patient who was attacked with very violent puerperal convulsions. I requested a friend to come to my aid, bring-

* This term *parallel*, as employed by some obstetrical writers, is not used correctly. There are no parallel sides of the head, but there are *symmetrical* sides or portions, using this term in its geometrical acceptation. The term *opposite* will not express their idea in this case, because the frons and occiput are opposite, but they are neither parallel nor symmetrical. The terms *similar* and *correspondent* may express the idea, but their import is more vague—less precise and technical than symmetrical.

ing a forceps with him. We made repeated attempts to apply the instrument, and with a similar result—we could not lock the branches. We then summoned to our aid a gentleman of much experience and repute as a teacher of obstetrics. He introduced the blades, and he found them no nearer to an apposition, that admitted of locking, than we had done. But, as a professor must not be thwarted in the exercise of his own art, and, moreover, as the case was very urgent, with a strong hand *he made them lock*, and soon delivered the child; but the temporal artery was wounded, the cranium was fractured, and the child was not a long time dead.

2. In a case where the use of the forceps seemed to be indicated, and where the head was above the upper strait, I called to my aid a gentleman of eminent skill and great experience. We both attempted to apply the instrument, and with equal want of success. We could not adjust it so that the branches would lock, or that we could obtain any command of the head. The vectis was also tried without success. The case was very urgent, and we were obliged to resort to *embryulcia*. This is the only instance in which this operation has been resorted to in a patient of mine, in a practice of thirty-three years. Owing to the disproportion between the dimensions of the head and the pelvis, it is, indeed, problematical whether the delivery could have been accomplished by means of the forceps, if it could have been adapted to the head, so as to lock; but it was very desirable to try the problem.

3. A few years ago I had a case, where, in consultation with a friend, it was deemed necessary to use the forceps. The head was above the upper strait, and I found it impossible to apply the instrument so as to lock the branches. I then made the female branch bear upon the pivot *without locking*, allowing the clams to be adapted to the head *obliquely* in their relation to each other; and using my hands as a lock, with much care to prevent slipping, I succeeded in safely delivering the child. If I had forced the branches to lock in this case, some violence must have been inflicted on the mother or child. This case, apparently so simple and devoid of striking incidents, was to me a very instructive one.

4. A case occurred recently in this city, as I have heard, where, owing to the difficulty or impossibility of properly adapting the forceps, the superciliary ridge was fractured and the eye destroyed. A similar case is mentioned in *Dewees' Midwifery*. These belong to that too numerous class of cases, the details of which are seldom allowed to escape the confines of the darkly shaded nursery.

Dr. Blundell very justly observes, "Unless the blades be elastic, absolute adaptation can (I conceive) never be obtained; for while the form of the instrument remains unchanged, that of the head itself varies." "The lock should be loose, so as to admit of a junction of the blades, although they may not be brought into exact apposition with each other; for, in applying them to the head, this adaptation cannot always be obtained." For this reason, he says that Smellie's lock (made loose) is decidedly the best.

Dr. Meigs says, "If we fail to adjust the branches accurately in apposition, we either cannot make them lock, or we lock them in such a way that the edge of the instrument contuses, or even cuts the part of the scalp or cheek on which it rests, leaving a scar, or actually breaking the tender bones of the cranium, while the other edge cuts the womb or vagina by its free projecting edge. In fact, the forceps is designed for the sides of the head; and if, under the stress of circumstances, we are compelled to fix them in any other position, [an incident not very unfrequent], we shall always feel reluctant to do so, and look forward with painful anxiety to the birth, in order to learn whether we have done the mischief we feared, but which we could not avoid."*

The difficulty and the danger in such cases evidently arise, to a great extent, from the want of an accommodating, rocking motion of the branches of the forceps upon each other, such as will allow the depressed ("cutting and contusing") edge to rise, and the elevated edge to sink and come in contact and apposition with the head; that is, so that the blades may be adapted to the head by varying from their usual relation to each other.

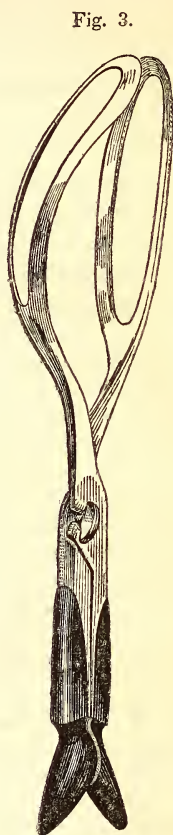
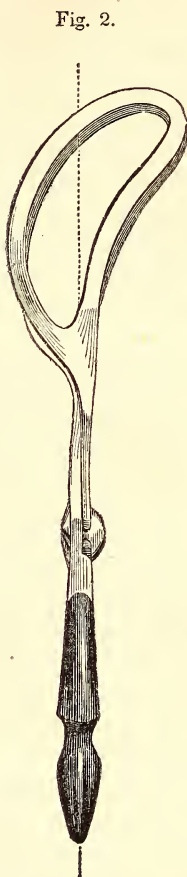
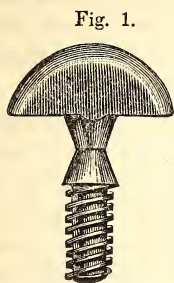
None of the French forceps, or their numerous modifications, so far as I know, are intended to admit of such a motion. When locked, they are truly locked; and whatever be the form of the head, or whatever the parts of the head to which the instrument is applied, the head must conform to the forceps and not the forceps to the head. Smellie's joint (which can hardly be called a lock) will admit of some motion, if made loose, as recommended by Dr. Blundell; but this motion is very limited and unregulated. Dr. Davis, of London, has adopted Smellie's joint, but without observing Dr. Blundell's precaution as to its looseness. The lock of Dr. Siebold's forceps, when the pivot is partly unscrewed, will admit of the lateral motion of one branch upon the other, to a very considerable extent. The branches of forceps are two levers of the first kind, the pivot being the common fulcrum of each. It is to be observed in Siebold's forceps, that the branches are so much curved—make so wide a sweep—that the fulcrum is far removed from the direct line between the power (the hand) and the weight (the head); and it will be seen on examination that this circumstance will render their lateral or rocking motion nearly useless, if not dangerous. Indeed, I should infer, from the structure of the joint and the form of the blades, that the use of this motion was never contemplated by the inventor.

A forceps was exhibited to the profession in this city, several years ago, devised with a view to supply a rocking, accommodating motion. It was constructed with a *swivel joint in each shank*, allowing motion to a limited extent. The objections to it were, 1st. That this joint rendered the blade very weak, and that it would almost unavoidably become corroded with rust. 2d. That the operator had no control over the motion of it; it would rock or wobble

* See "*Obstetrics; the Science and the Art*," chap. xv., for much information and excellent lessons on the use of the forceps. I commend attention to the author's emphatic inculcation of the idea, that *the forceps is the child's instrument*.

always, whereas the rocking motion is not commonly requisite. This unrestricted motion, together with the form of the blades, would render this instrument very liable to slipping or displacement. I have forgotten the name of the inventor, and I am not aware that there is a specimen of the invention in this city.

In the instrument,* which is illustrated in Figs. 1, 2, 3, I have attempted



to supply what has seemed to me an obvious *desideratum*, viz., to give the branches of the forceps an accommodating rocking motion upon each other, the extent of which can be regulated at will, and which shall in no respect lessen the power of the instrument. The mechanism devised to obtain this motion is very simple, not liable to derangement, and it may be adopted in the construction of forceps of other forms than that here presented; provided that

* The instrument, from the manufactory of Messrs. John Rorer & Sons, of Philadelphia, is made of German steel, and spring-tempered

the pelvic* curvature of the branches does not take such a wide sweep, as to throw the pivot far out of the direct line between the handle and the centre of the fenestræ.

The instrument will be seen to differ, as a whole, from any now in use; although no one of its modifications, except the lock, has any claim to novelty. The handles are Dr. Siebold's, with unimportant modifications. The blades are Dr. Davis's a little modified. Its whole length is about fifteen inches, and its weight about fifteen ounces. The length of the handle is six inches, and that of the blade nine inches. It might be made somewhat shorter and lighter without impairing its power.

Of the Lock.—In Fig. 1 (the pivot of full size), the *screw* is of about double the diameter and nearly double the length of those in other instruments. This *additional strength* is necessary, because the bearing point of the pivot is not immediately above the blade in which it is inserted (as in other instruments), especially when this bearing point is elevated so as to give the blades a free rocking motion. The *additional length* is required to give the screw a firm lodgment, when it is partly withdrawn from the blade. The *thumb-piece*

* There being some vagueness and discrepancy in the use of the terms employed in describing the obstetrical forceps, I here offer some explanatory remarks. These may be entirely superfluous to many readers, but perhaps not so to all.

A forceps consists of two *branches* (*brachia*) and a *pivot* or *fulcrum* (that is, in such forceps as have their branches connected by a pivot). A branch consists of the *handle* (*manubrium*), which extends to the joint (*junctura*), and of the *blade* (*cochleare*), which extends from the joint to the remote point. The blade consists of the *clam* (*cochlea*), which is that concave portion of it intended to embrace the head, and the *shank* (*femur*), that portion between the joint and the clam. This division of the blade into shank and clam is not recognized by Mulder, but it has become very convenient if not absolutely necessary. The two parts of the clam, on the sides of the opening or *fenestra*, are sometimes called the *limbs* of the blade, viz., the *upper limb*, and the *under* or *outer limb*. The pivot consists of the *thumb piece*, the *screw*, and the intermediate *bearing point* or *fulcrum*. When the branches are connected by a pivot, they are usually designated as the *male* and the *female branches*; that which has the notch for the reception of the pivot, being the *female* and the other the *male* branch.

Dr. Velpeau designates the two branches as *the right and the left*, from the *position of the handles* as held in the hand of the operator. It seems to me more appropriate to designate them from *the position of the blades*, these being the more essential parts of the instrument, and the attention, in an operation, being directed more to the position of the blades than to that of the handles. Otherwise the blades seem to be playing at cross-purposes—the right blade being on the left, and the left on the right. I am aware that it may be said, in support of that usage, that the branches are named right and left, in reference to the pelvis of the patient. For the same reason, when riding backwards in a coach, a man's right hand becomes his left.

As one curve of the forceps is made in reference to the form of the head, and the other to that of the pelvis, it seems to me more distinctive and suggestive to name them respectively *the cranial* and *the pelvic curvatures*, than the *old* and the *new* curvatures. This was *new* in the time of Levret, but it has ceased to be so; and we do not derogate from the credit of the inventor of that important improvement by giving it an expressive term.

is made to fit so close upon the female blade, but without resting upon it, and is so thick and rounded, that there may be no risk of injury should it ever happen to be brought into contact with the patient. The screw, when well made, will turn so easily that the thumb-piece may be made much less prominent than it is here represented. When the forceps is used, the thumb-piece should be placed *parallel with the blades*; otherwise it may interfere with the rocking motion. Between the thumb-piece and the screw, the pivot is of the form of two *frusta* of cones of equal dimensions, united together at their smaller diameters, forming an obtuse angle or groove at their junction. The base of that cone joined to the screw projects a little, forming a shoulder, intended to limit the motion of the screw into the blade.

The notch in the female blade, made to receive the pivot, is so deep that the pivot, in relation to the edges of the branch, is nearly in the middle; yet the width of this branch, opposite to it, is swelled out, so as to give it adequate firmness. The width and the form of the *sides* of the notch are accurately adapted to those of the pivot, and the *bottom* of the notch terminates in an edge, like the knife-edge of a balance, which is intended to rest in, and bear upon, the angle or groove in the pivot. On the under side of the male blade is seen a protuberance, finished so as to present no salient points. It is a shield for the extra length of the screw. When the pivot is screwed entirely down, the branches have no more lateral or rocking motion than those of any other forceps, and, in this condition, they will very generally be used. But by turning the screw, so as to elevate the bearing point, more or less freedom is given to the rocking motion, according to its elevation; and this motion is effectually restricted within any desired limits. When, by means of this free motion, the operator has been enabled to grasp the head, he may sometimes change its position, so that the clams may be then adapted to the head, without the obliquity at first necessarily allowed to them by the elevation of the pivot; and then, if desirable, the pivot may be screwed down, and the blades will become as fixed as those of other forceps.

Two objects seem to have been kept more or less in view by the various modelers of the obstetrical forceps. One of these objects has been *efficiency*, having reference chiefly to the certainty of accomplishing the delivery. Of this sort is the long heavy French forceps, and to some extent its several modifications. It is undoubtedly a powerful, but dangerous, instrument. The narrowness of the blades allows them to be introduced with comparative ease to the operator, and then (with such powerful levers, as their long handles) also to be locked with apparent ease, without being adapted to the head. They must be efficient in the hands of a bold operator in effecting "a triumph of the art," but, like other victories, too often attended with havoc.* The other of these objects has been *safety*, especially for the child. Dr. Davis, of London, seems to me to have had this object especially in view in model-

* See Blundell's "Obstetric Medicine," part ii., chap. viii., sec. 3, last paragraph.

ing his forceps, and to have been so engrossed with it that he has not had a due regard to efficiency. Such blades as his, in awkward, inexperienced hands, and indeed in any hands, are probably less easily introduced so as to be locked than the French forceps; because, for the purpose of locking, they require a more exact adaptation; but when applied they are much safer—there will be much less probability of injuring the child. The French forceps have received several successive modifications in this country, which add much to their safety and convenience. Indeed some accoucheurs extol some of these modifications as the *ne plus ultra* and almost the *sine quâ non* of obstetrical instrumentality.

It will be seen that the *blades* of those here presented (Figs. 2 and 3), resemble nearly those of Dr. Davis. The shanks are considerably longer; the clams are not quite so long; the radius of their pelvic curvature is a little less, especially that of the outer limbs, so that it will be less liable to be obstructed by the promontory of the sacrum, in passing the instrument above the superior strait. The fenestræ are wider in their middle and posterior part than those in most other forceps now in use. When the pivot is elevated, so as to allow the blades their rocking motion, this width becomes especially requisite in order to secure a firm hold on the head, and to avoid the risk of their slipping sideways. The space between the blades is such, that, when applied to the head, the handles shall not be at a distance from each other, awkward and inconvenient to the operator. From the pivot, the upper line of the shank continues forward, without any elevation or depression to the beginning of the pelvic curvature; and the form and the relation of the shank to the clam are intended to be such as to interfere the least with the perineum.

While a form has been selected, which, it is believed, will admit of application easy and safe for the mother and child, and grasp the head above the superior strait, it will be seen (Fig. 2) that the pivot is in a direct line between the handles and the centre of the fenestræ. This is a *point of importance* in those cases where the rocking motion of the blade may be required, as it will cause each limb of the clams to press with nearly equal force, thus avoiding undue pressure upon any one part of the head, and the liability to slipping or displacement.

The *handles* are made partly of ebony, and they resemble those of Siebold, although considerably lighter. The precise model, of those represented in the illustration, is not important; for it may be varied to suit the grip or the taste of different operators. The objects aimed at in their construction should be, *first*, such a length, compared with that of the whole instrument, as to give a sufficiently firm hold and pressure upon the head, without inflicting a dangerous compression; and, *secondly*, such a form as to allow them to be easily grasped in the hand of the operator, with the full assurance that he has the best command of the instrument, without the danger of slipping, and without the necessity of a napkin envelop. These qualities do not belong to

the long polished steel handles, which are heavy, upon which the wet, oiled hand of the operator must slip, and which, even when encumbered with a napkin, must convey an uncomfortable sensation of misgiving. Ask the lithotomist or amputator how he would like to have his instruments finished with such handles that he would be obliged to grasp them wrapped in a napkin? One prominent objection, if not the chief one, to Dr. Davis's forceps, is the shortness of the handles and their uncomfortable grip, except in a hand inconveniently large for an accoucheur. They cannot, however, slip in the hand, like those of polished steel.

The attempts to combine several other instruments in the handles of the forceps, I regard as, generally, worse than useless. With the long polished steel handle may be combined an efficient blunt hook. But with such a heavy, mis-shapen handle, the operator would be much more liable to injure the mother or child than with a well-constructed blunt hook. I refrain from any criticism upon such useless perforators and dangerous crotchets as I have seen combined with forceps. It is sufficient for an instrument, so important as the forceps, that it is exactly fitted for the performance of its appropriate uses. In skilful hands it will preclude the demand for the perforator or the crotchet, except in very rare cases; and in these terrible cases, truly of life and death, the operator ought not to be satisfied with instruments which are but ill-contrived *succedanea*.

I am aware that the first impression of some persons, upon looking at the illustrations, will be, that the instrument is too straight, that the pelvic curvature ought to be continued into the shanks. If the whole operation, or the most difficult and important part of it, consisted in passing the blades above the superior strait, narrow blades, with a curve of a wider sweep, like those of Professor Siebold, slipping in probably with rather more facility, would be preferable. But as those here represented can be passed above the superior strait with facility, it seems to me that what I have already said upon the importance, in many cases, of having the pivot in nearly a direct line between the handles and the fenestra, furnishes a valid reason for adopting a model not differing essentially from that here presented.

Others may object, that unskilful and incautious persons will be tempted to carelessness in applying such a forceps, and to avail themselves of the free motion of its lock unnecessarily. Professors of obstetrics, if they deign to notice it, ought to give their pupils the proper directions and precautions in the use of this instrument, as they do in that of others. Some persons are, indeed, so unhandy in the use of any instrument or tool, that all the professors in the land cannot give them such tact and dexterity, that they ought to be allowed to approach the puerperal bed. Should this instrument happen to fall into such hands, the danger to either mother or child would probably be much less than from the use of powerful, unaccommodating forceps, misapplied by such hands.

Others may object that it is an innovation, a gim-crack novelty—for they

are the *conservatives*, scrupulously maintaining the ancient landmarks. It differs from the one extolled by their venerated preceptor, the one to which they have been accustomed, and in the use of which experience has given them expertness. Long companionship produces partiality, and perhaps some little modification of their own may have given them the feelings of paternity. It has answered their purpose, for with it they have accomplished delivery safely; and if, in some instances, they have wounded the integuments or fractured the cranium; or if they have been compelled to resort to the perforator, in cases where the forceps was indicated, they will console themselves with the reflection that it was an inevitable destiny—a fault of nature, and not a defect of art.

In conclusion, I must observe that I am by no means pertinacious for the precise model of the instrument presented in the illustration; for it is not improbable that experience may suggest modifications of it, which will improve its adaptability, and yet retain its essential principles. All I ask is, a careful and candid examination of those principles.

ART. VII.—*Histological Researches on the Development, Nature, and Function of Epithelial Structures*. By W. J. BURNETT, M. D. (Read before the Boston Society for Natural History, Aug. 1, 1849.)

THE study of epithelial and epidermic structures was pursued most faithfully and successfully in the years 1835–36, by Purkinje, Valentin, and Henle. To these investigators and able physiologists belong the refinement of the quite crude notions of these structures entertained by the earlier anatomists. This portion of general and minute anatomy received at that time, both by these men and their coadjutors, such a thorough analysis, that later inquirers have been content to follow in their paths without entering upon the many portions of this field of inquiry hitherto unexplored.

It is for this reason that we find in the general works and text-books of anatomy and physiology a succinct account of these tissues taken for the most part from the writings of these men. Their higher relations, however, to all or nearly all the more important functions of life have been, although the most interesting, but lightly discussed; and the paucity of thorough observations in this direction must have been felt by every student of minute anatomy.

From continual microscopical examinations and investigations of the various tissues of the economy, the importance of this structure has been repeatedly impressed upon my mind. In common circumstances, the difficulties of such investigations are not easily met; and it was from the fine opportunity afforded me by the presence in this city of epidemic cholera, that I was induced to follow out these inquiries.

While making a somewhat extended series of microscopical analyses of the well-known *rice-water* dejections from patients affected with this disease, in order to arrive at either positive or negative results as to the importance of such analyses towards determining its cause, the immense quantities of epithelial structure continually in the field of observation was a pressing invitation to examine carefully its structure.

This epithelium, the immense quantities of which give the dull-white opacity or "rice-water" character to these dejections, appears to be removed still attached to the *basement membrane*, in quite sizeable flakes, and in a condition far more delicate and uninjured than could have been brought about by the gentlest and most accomplished manipulations of the anatomist.

Inquiries of this kind are of importance in two points of view. 1st. As elucidating the development and nature of this tissue, considered as a structure of the animal economy. 2d. As illustrating, in a very definite manner, the origin, development, and real nature of cells considered as the primordia of all organized forms.

I need not here point out what others before me have done, either upon this structure or upon the general doctrines of cells involved in the following pages, but shall take up the subject as it was investigated, authors being credited as known portions of it pass in review.*

Epithelial structure, it matters not where it is found, is always essentially the same—and, in brief, is composed of individual, non-organizable cells, attached to a primary membrane, which last is itself attached to the tissue to which the epithelium belongs.

This arrangement is quite prominent and easily seen upon the tubes of the body, and although not capable of an equally satisfactory demonstration, yet most probably the epidermis (the external continuation of this epithelium) is thus arranged upon a primary or *basement membrane*. The localities of epithelium are summarily the following, viz., the skin; the alimentary canal, and its appendices, even to their minutest ramifications of tubes; serous and synovial cavities; the heart and blood-vessels; the lymphatic glands, and those connected with the reproductive system (mammæ and testes).

* For the principal works on this subject, the reader is especially referred to the following:—

Purkinje et Valentin—"De Phenomeno Generali et Fundamentali Motus Vibratorii continui in Membranis Animalium." Breslau, 1835.

Schwann—*Mikroskopische Untersuch.* 1839: p. 85.

Müller—"Elements of Physiology." Translated by Baly: vol. ii.

Henle—"Traité D'Anatomie Générale." Trad. par Jourdan. Paris, 1843: vol. i. p. 225.

Valentin—Art. "Flimmerbewegung," in *Wagnér's Handwörterbuch der Physiologie*.

Also the writings of Gerber, Carpenter, Todd and Bowman, and many others, scattered in various journals.

Although some of my own observations are but repetitions of some recorded by these men, yet that the subject may be the more complete, and as I was then ignorant of them, I have thought best to record the whole.

We see by this that epithelium exists wherever there is mucous membrane, but that it is also found where the former is not.

It may be divided into three varieties, known for some time as the—1st, pavement; 2d, the cylinder; and 3d, the ciliated epithelium. Viewing an epithelial cell as the representative of a species (and it has under *all* circumstances the same characteristics, sufficient to entitle it to the name, and cells have *their* types as well as the higher organizations), the two second forms may be considered as mere varieties or transitionary forms of the first, or pavement, since they arise from it, and only progress to little farther and varied stages of development.

As I have had the pleasure of being able to study all of these forms, as to their origin, development, and their assumption of the peculiarities which distinguish them as varieties, I shall take up each separately.

1st. *Pavement Epithelium*.—This is the simplest form of this structure, and lines the most delicate surfaces belonging to the economy, besides forming the epidermis. It is found upon serous and synovial surfaces, lines delicate tubes, and covers some portion of the alimentary canal. In fact, it occupies all secreting surfaces. This epithelium consists of spheroid cells, of a size varying from $\frac{1}{3000}$ th to $\frac{1}{2000}$ th of an inch in diameter; each have a roundish, oval nucleus, which is a hollow sphere, and inside of which is sometimes a nucleolus. Situated upon the *primary membrane*, from which they appear to grow, they seem bound together by a most delicate tissue. From such contiguity, and from equilateral pressure, hexagonal and other forms are produced.

The early formative stages of all epithelium are the same, and as the tessellated or pavement variety is of all the simplest, I shall, of course, in describing its origin, give at the same time the different phases of early growth through which the other two forms likewise pass.

The earliest stage of development that I have been able to see in this structure, is a spheroid “bud” standing off the primary membrane. This is the embryo-cell, and may or may not contain a nucleus.

By the function of endosmosis its nutrition goes on, and it gradually enlarges, still preserving its spheroid shape, and its attachment to the *membrane*.

All this time, during which the cell is arriving at its adult and perfect state, and just ready to discharge its function as an individual cell, the nucleus is increasing and assuming more and more the characters of its parent. From a mere dark point in the centre of the parent-cell, it enlarges by endogenous growth, and soon is a hollow vesicle like its parent, but is filled with a *granular* fluid. But the contents, before being granular, are clear and hyaline; so that the first is the *hyaline* stage, and the second the *granular* stage. From this granular liquid, and making the third stage, a nucleolus is formed, but by a method which I was unable positively to determine.

Sometimes two nucleoli are formed in one nucleus; and such phenomenon cannot, I am well assured, be considered accidental, but as having a positive relation with the reproduction of cells, as will soon be made evident.

Most commonly, by the time this *nucleolus* has appeared as a *vesicle*, the parent-cell disappears; so that the occurrence of nucleolated cells in the field of observation is not very frequent. Henle affirms that he has never or quite rarely seen nucleolated cells of epithelium, except in the lower vertebrata.

The parent-cell bursting and discharging its contents, and these contents form the various secretions—the nucleus, being generally unattached to the cell-wall, is set free—and thus freed, it is a true nucleated cell. Whether it then attaches itself to the primary membrane, and then follows the same course as did its parent, is a point which I have been unable to determine. A new cell-bud immediately succeeds the place of the old one just passed away, and passes through the same phases. There is, therefore, a continual death and reproduction of cells, each of which has an individual existence like any of the compound organizations, and which, having completed, they die. The aggregate of these existences, in certain localities, constitutes, in most cases, a certain function in the economy.

For the sake of conciseness and future reference, we will divide the life of these cells into the following well-marked epochs:—

- 1st. A cell-bud as a hollow sphere, containing a clear liquid.
- 2d. The clear liquid of this “bud” has a nucleus as a dark point.
- 3d. This nucleus is a vesicle having a clear hyaline liquid.
- 4th. The original cell still larger, the nucleus having a *granular* liquid.
- 5th. An adult cell, whose nucleus has a nucleolus as a point.
- 6th. Death of parent cell, with a discharge or retention of the nucleus.

Such constitutes the whole biography of cells of epithelium, under most circumstances, and as they are commonly observed; and it will be seen that the general outline corresponds with that of other cells as already observed. The peculiarities here, however, as well as others quite as important connected with their reproduction, deserve our special attention sufficient for another and future separate section.

Cylinder Epithelium.—This, as its name implies, is composed of cells of a cylinder-like shape, though as to exact resemblance, being more like a cone reverted. These cells are attached to the primary membrane by their small or caudate extremity, their broad or vase-like portion floating free. This free extremity is sometimes convex or concave, and sometimes truncate. This form is found, as far as I am aware, upon the mucous membrane alone; and from my own observations, is rarely seen except upon those of the alimentary canal of the vertebrata. It appears to be only the tessellated form modified by a further development;* for like that form, it arises from a primary membrane in the shape of small spheroid cells, nucleated, &c. These increase to a certain size, and then begin to gradually elongate, and this elongation taking place at

* It would appear to be a law among cells of an organizable capacity, or as individuals by themselves, that the more they depart from their true spheroid cellular character, and assume other shapes, the higher may be considered their development.

the expense of that portion attached to the membrane, it necessarily becomes fusiform.

The length of this caudate portion varies much : thus, upon the mucous membrane of the digestive tube the cells are simply pyriform, while those from the bladder have, as may easily be seen, often a tail three or four times the length of the cell proper.* The nucleus and nucleolus of this variety in no way differ from those of the pavement or simplest form just described. As for its more special localities, it would be rather difficult to define them accurately. It occupies mucous membranes only, and generally those which act as large aperient ducts. Rarely is it found investing parts, having the functions of peculiar secretions, and it is in this way that it differs physiologically from the pavement form.

Ciliated Epithelium.—This is the third and last variety—and, aside from the phenomena which invest it in common with the other forms with great interest, it has others of the most curious and remarkable in physiology. We will therefore give it a detailed and special attention.

Its marked anatomical feature is that one or more of the surfaces of the cells (which may be of a pavement or cylinder form) are covered and studded with digitoid elongations of the cell-sac, known better, perhaps, by the name of *cilia*. Henle represents the ciliated epithelium as belonging to the cylinder form only; but my own observations have shown that, although generally of the cylinder form, it may often be found, especially when taken from the human mouth, or from those of the Batrachians, to be of the pavement variety. Its origin and simple cell characteristics need not detain us; for, previous to the formation of the cilia, it has no distinguishing traits.

The production of these cilia I have had the good fortune to observe—the observations being made upon the epithelium of some of the Batrachians.

It takes place in the following manner : The cells having reached the adult age (for I have seen no *young* cells with cilia), there appears upon its free extremity a vesicular projection, which, when fully formed, rests like a cap upon its surface.

This then splits up into fasciculi, which, being sub-divided, form the true cilia.†

The cilia are therefore situated upon the extremity alone of the cell, if the cell be of a cylinder shape, and upon a certain segment if the cell be spheroid.

Generally speaking, they stud thickly the surface, but I am quite positive

* The extreme caudate character of many of the epithelial cells of the bladder is a fact worth the remembering, in a pathological as well as physiological point of view. For with those not accustomed to observations of this kind, the appearance of such cells in urine would be a matter of much surprise. At first they might seem to be spermatozoa, then again the caudate cells of encephaloid carcinoma.

† Kölliker, in a work published in 1840, has noticed, as I have since found, a similar mode of their production in the cells of the oviduct of *Planorbis corneus*.—Vid. Beitræge Zur Kenntniss der Saamen fluessigkeit wirbelloser Thiere." p. 33.

in affirming that in some few instances I have seen them situated coronet-like around the edge, the middle portion being unoccupied. In such cases no new mode of formation is involved, since such a disposition would ensue, if the parent vesicle had become concave before the division into fasciculi.

The structure of these cilia has been much commented upon by Ehrenberg, Purkinje and Valentin, and, as far as concerns those of epithelial cells, has had an undue share of importance. They speak of them as being bulbous at their lower extremity; but although my own observations on this point have not been sufficient to afford me an opinion, yet their very mode of formation seems to argue against such view, and indicate that they differ in no way from the cell-wall on which they stand.

Ciliary Motion.—The most interesting and the most difficult part of our subject appear together; and one cannot leave this field of inquiry without having many new views of animal powers and forces. The motion of entire cells cannot fail to excite our attention, but the movement of appendices to cells, when a certain and definite system of motions is performed, is one of the most interesting points in physiology.

We are here at once brought back to our simplest ideas of motion, and where the fact does not suggest a complication, as in the higher forms, but where the relations of the body or bodies to space is most simple, because the power acts most probably in a direct manner. It is on this account that I shall treat this portion of our subject with more than ordinary detail.

The cilia of epithelial cells seem to have two kinds of motion only. *1st.* A moving or fanning motion, which when slow is very uniform; but when rapid, assumes a kind of dancing character. This is the most common movement seen. *2d.* A twirling rotatory motion of the lower portions of the cilia, being infundibuliform. Of whichever of these the motions may be, they are always uniform throughout the same cell; thus indicating that the cause acts equally throughout.

We know as yet really nothing about the essential nature and cause of animal motion. We may divide and subdivide the powers by which it is expressed in the higher forms, but inevitably fall upon the last material mechanism through which it is produced, and can go no further.

The ideas of muscular or an allied tissue and those of animal motion have appeared almost inseparable in physiology; and this because animal actions have always, or nearly always, been traced to such tissue; and where, in some of the lower forms, its direct demonstration could not be made, its presence has been assumed in virtue of necessity. But it seems to have been forgotten that, as in the external world, the same results follow from the employment of dissimilar means, or *vice versâ*, so in the domain of physiology, we often have the same function performed by dissimilar organs, and *vice versâ*.* We can, therefore, consistently with analogy, look for real motion from other

* Strauss Durckheim.

than muscular tissues, and I have no doubt that further and more accurate researches into the infusorial world will lead us to adopt views of this kind.

This digression may serve as a fitting prologue to the following and most difficult part of our subject.

Ordinarily, ciliary motion may easily be observed, but few are aware of the difficulties which prevent a true solution of the problem of its cause. The first step in an inquiry of this kind is to ascertain how far we can consider these muscular movements.

It is well known that Ehrenberg has affirmed to have seen bulbous roots of the cilia of some of the infusoria, and thinks that these bulbs contained the small muscles by which these bodies were moved. But although bulbous cilia may have been seen, yet the assertion of the muscular contents is quite gratuitous, as it is based upon the idea that their motion must be of muscular origin.

Purkinje and Valentin afterwards thought that the cilia of epithelial cells are bulbous; but as would be but justice to the optics of the time at which their investigations were made, they are far from being positive on this point. The grounds for not adopting the opinion of their muscular cause become more numerous and positive as the inquiry proceeds.

In the first place, the relative size of the cilia to that of the muscle makes it inadmissible, for in the vertebrata the cilia of cells are very much smaller than the smallest fibrillæ of muscular tissue; so that, if the moving tissue be muscular, it is different from that of the body generally. To the same effect is also argued by the primitive formation of muscular fibrillæ—being chains of cells, nearly as large as those of epithelium themselves.

The followers of Ehrenberg would perhaps affirm that these are no objections, since that great microscopist has mapped out whole systems of internal organs in animals equally as small. Be this as it may with Ehrenberg, other observers upon this subject have arrived at the conclusion that the difficulties of observing clearly and accurately matters so extremely minute, with the microscope, must ever cause an unfortunate obscurity to exist upon this and all kindred subjects.

There are, however, other objections of more determinate value.

The motion of the cilia belongs to the cell alone, and has no connection with the system to which the latter is attached. This is at once demonstrated by their long-continued movements, when the cells are swimming free in the field of view. We know as yet no muscular tissue which has not nerves, and one cannot for a moment suppose that these cells have a nervous tissue.

Some experiments instituted by me upon the epithelium of some of the Batrachians have all tended towards the same point.

I killed a frog, and wrapping it in a damp cloth, laid it aside for sixteen hours. At the end of that time, I found the cilia of the epithelial cells of the throat in active motion. At the end of forty-eight hours, the motion had not ceased, although the animal had so far decomposed as to be offensive.

These experiments were repeated with the same result, and in one instance I think the motion was continued for a considerably longer time. At least it appeared that the motion could be kept up long after the animal, and even the primary membrane, had begun to decompose; and that they always were present until the death and disruption of the cell to which they belong. And from this it would appear that they are inseparably connected with the life and functions of the cell.

The effect of physical agents upon these movements should not here be omitted.

Ether, as is now well known from a modern discovery, when inhaled and distributed throughout the system, first paralyzes the muscles of animal, and lastly those of organic life; and when this last occurs, death of course follows.

In my own experiments with this agent upon some of the lower animals, I have found that if the etherization be sudden and fatal, the post-mortem muscular irritability of the animal is either very much impaired or entirely destroyed; in other words, the shock which the nervous system thereby receives is so great as to destroy essentially most of its inherent energy and susceptibility to the action of external agents.

With some frogs, which I suddenly and fatally etherized—and whose organic life seemed thereby so completely destroyed that irritation would not produce any muscular excitation—I found that the motion of the cilia of the epithelial cells upon their mucous membrane was not in the least impaired by such experiment, and their duration was equally as long as those of cells coming from animals otherwise killed.

The narcotico-acrid poisons seem to have as little effect; for with an animal which I destroyed with strong hydrocyanic acid, there appeared no change in the movements of the cilia.*

It would be supposed that the effect of electricity upon these bodies would be productive of results tending to throw some light upon the nature of the moving power, since we are now so well acquainted with its usual effect upon all known contractile tissues.

With a view to learn definitely the effect of this agent in this respect, I made the following experiments:—

A frog was taken, and being rendered insensible by ether, one needle was inserted into the brain and another into the lower portion of the spinal cord. A powerful electro-magnetic shock was then passed through the animal, the wire touching the two points. The animal was instantly killed. An immediate examination of the epithelium upon the mucous membrane showed the motion of the cilia to be unaffected.

Not satisfied with this experiment, I took another frog; and, after etherization, inserted two needles opposite each other, just under the mucous mem-

* Purkinje and Valentin speak of having tried strychnia with the same effect.

brane of the pharynx; a powerful shock was then given; an immediate examination of the cilia showed them in active motion.

To make the matter still more certain, I took another frog, and dissected up a quadrilateral strip of the mucous membrane of the pharynx. The needles being insulated from the rest of the animal were inserted oppositely. A charge was then sent through it, but the motions of the cilia were not affected.

Lastly, I took another frog and removed from its mouth a portion of the epithelial layer. This was placed upon a plate of glass in water, and then put under the microscope, and, while I was observing the motions of the cilia, an assistant applied the two poles of an electro-galvanic battery at the opposite ends of the glass in the water. A charge was then transmitted, but all the while the motions of the cilia were not in the least perceptibly affected. These various experiments were repeated, but with the same results; and in all of them great care was taken that no means of delusion should be introduced.

It would therefore appear from the above, that whatever may be the moving power of these cilia, their motion, unlike that produced by all other contractile tissues with which we are acquainted, is unaffected by electrical agents.

We again revert to the question, *What is the cause of ciliary motion?* Let us sum up the arguments which go for its exclusion from the muscular domain.

1st. It appears that the power belongs to the cell, considered as an individual organism.

2d. That the motion is capable of continuing until the death of the cell, it matters not what changes occur in the animal body to which they belong.

3d. That the motion is unaffected by any method by which the animal to which they belong may die.

4th. That electrical forces, to which the other contractile tissues have so great a susceptibility, do not in the least affect the continuance or variety of their motions.

5th. That all acids which, when directly applied, impinge upon the tissue of the cells, destroy rapidly the movements of their cilia.

Now, if we bear in mind these results, and at the same time the fact that as yet no muscular structure has been distinctly seen in these bodies, and that they are known to exist on the ova of polypes, which in one sense are structureless—these points being considered, one is perhaps justified in dissenting from the opinion of Prof. Ehrenberg, that they are the result of muscular tissue.

With such a negative view, I am quite unwilling to offer any positive opinion, more especially when I reflect how little we know concerning the cause of motions in the lower and infusorial world.

Voluntary motion has been considered the peculiar feature of the animal world, and the distinguishing characteristic which separates it from the vegetable kingdom. But the whole matter is now just as vague as before this feature was introduced. For it now remains to be decided what constitutes voluntary motion—a question not yet ripe for decision.

If we consider that among the higher animals, a voluntary motion consists mainly, 1st. In a sensation being perceived; and 2d, a consequent action; then certainly we cannot regard the "adapting" motions of the members of the lowest animal world, scarce escaped from the characteristics of maternal cells, as voluntary, when their organization admits of none of the usual sentient organs.

Take any species of the class *Rotatoria* of Ehrenberg, and observe its motions beneath a microscope; they are not molecular, nor oscillatory, but have a certain indistinct adaptation to existing circumstances. Such motions are wrongly termed voluntary, and although they seem somewhat different from those of the *Oscillatoria* of the vegetable world, yet most probably belong to the same category. To the same belong the movements of spermatie particles which are only epithelial cells of a peculiar animal character,* and fulfilling a higher function than that usually allotted to these cells. The spermatie particles exhibit the same phenomena as to motion as do the cilia of the epithelial cells, under the same experiments above instituted; and as a variety of epithelial structure, it would have claimed our special attention were it not too long, and already the subject for a future discussion.

Exactly as the movements of the cilia cease with the life of the epithelial cell, so do the motions of spermatie particles cease with their vitality.

All these epithelial motions have not the least claim to that of a voluntary character, although often remittent in their course. All that the foregoing inquiries and experiments have shown, are only negative in character; and for positive knowledge of the cause of ciliary motion, we probably shall never have it until we know more extensively and clearly the laws of vitality as manifested in primordial organic forms. However this may be, the following conclusions can, I think, be justly drawn from the foregoing remarks.

1st. If the movements of the cilia of epithelial cells are due to a contractile tissue, at their lower portion, this tissue is unlike any other contractile tissue of the animal economy with which we are acquainted.

2d. We have no reason to suppose this tissue to be muscular.

3d. Because of the relative size of the fibrillæ to that of the cilia, and of the absence of nerves.

4th. Because also electrical agencies do not affect it.

5th. We cannot consider this contractile tissue of the nature of that of the dartos.

6th. Because the movements of the cilia are of a uniform and rhythmical character.

7th. That these movements are inseparably connected with the life of the cell to which they belong, considered as an individual organism.

8th. That these ciliary movements of epithelial cells are, in many respects,

* This I am persuaded, from observations in this direction, which have of late quite closely engaged my attention, and which I shall expose at another time.

analogous, if not identical, with those of many of the infusoria, and also with those of the ova of polypi.

9th. That after a full consideration, one would be inclined to the opinion that ciliated epithelial cells (spermatic particles included), although belonging to the category of individual animal cells, differ widely from cells in general, and especially as exhibiting a higher form of vitality and function.

Reproduction of Epithelial Cells.—While speaking in the foregoing pages of the growth of epithelium, I merely alluded to its reproduction by the usual endogenous cell method, viz., by nuclei growing into cells. It would have then been in order to have closed up all that which relates to this part of the subject; but as it might obscure the description there given, and more especially as it seemed to demand a separate paragraph from peculiarities, I shall here take it up as a distinct portion.

The earliest period at which we can observe, the future cell is a minute granule in a blastema. As to the origin of this, we know really nothing. Next, it is observed as a hollow vesicle, filled with clear fluid. Still further, this liquid is cloudy and granular. Next, the granular appearance has disappeared and a solid nucleus is seen. All this while the parent cell is increasing, and at this period you have a nucleated cell. This nucleus goes through the same changes as its progenitor; and when it has a nucleus, we have a nucleolated cell.

It will immediately be seen that the mode of cell formation here indicated is quite different from that advanced by Schwann and Schleiden as to both animal and vegetable cells. It is important, therefore, on this very account, marking a more extensive mode of their production. But its great interest lies in another direction, as showing the real grounds of the identity of the character of a cell and that of an ovum.* An ovum, we know, is but an agglomeration of peculiar cells, for the highest end attainable by cells in the animal economy. Our simplest and most divested idea then of it, is a peculiar cell, and the changes here spoken of relate to the real value of this peculiarity.

I have spoken of spermatic cells as being really epithelial cells. Now, between the true structure of an ovum and that of a cell there is no dividing line among the lower animals; and we can only decide the character of each by the products (ova or sperm) which each yields. In these cases, the ova are first cells upon a basement membrane of the ovarian tubes, and except for a few peculiarities, do not differ from the sperm cells originating in the same way. Ova are therefore originally but epithelial cells. It can therefore be no wonder that the formation of epithelial cells upon mucous membranes should thus so thoroughly agree with the formation of ova.

Prof. Agassiz was the first, I think, to point out these changes as occurring in the ovum. This he did in the spring of 1848.

* Vid. a paper on this subject, in proceedings Am. Associat. for Prom. of Science, 1849, p. 261.

His observations were made upon some of the invertebrata, and upon the ova in their earliest stages, viz., as primitive oval cells. I need not here detail them; the same phases are passed through exactly as those just indicated with epithelium. The peculiarities, then, of ova, or more properly of ovarian cells, lie not in their origin and mode of endogenous reproduction, but in their capacity for a destined and invariable end; viz., the reproduction of a new individual being.

Another mode of the increase of these cells, and which I have repeatedly seen, must not here be omitted, especially as it is in corroboration of the above views.

Out of the granular contents of the nucleus of a cell, there sometimes appear two nucleoli, instead of one. These are generally not near each other, but at opposite extremities of the nucleus, which is then oval.

Soon after this, a slight sulcus is perceived at one of the poles of the transverse diameter of the nucleus. This deepening, the single nucleus becomes finally divided into two. So that from one nucleus of a parent cell, two nuclei may occur, each of which has its nucleolus.

This mode of increase by fission corresponds exactly with the multiplication of the vitelline cells in the ovum. So that the mode of increase of the ovum cannot, as has heretofore been done, be considered as peculiar, but as belonging to those same laws which seem inherent in all single, non-organizable cells.

Functions of Epithelium.—The elaboration from the blood of the special fluid of the animal body, known properly by the name *secretions* (not *excretions*), is performed, it would appear, by the agency of cells; and our best anatomical as well as physiological idea of the organs performing these functions, is a tissue or tissues, so arranged or disposed as to afford the largest surface for the existence of cells. These organs are glands proper, and the cells elaborating these secretions are epithelial cells.

Saliva, milk, gastric juice, pancreatic fluid, bile, synovia, spermatic fluid, the secretions of the vascular sanguineous glands—as the thymus and thyroid glands and suprarenal capsules—the various secretions of serous cavities, all owe their peculiarities to the particular elaborative action of the cell walls through which they are obliged to pass before discharged. These are but the combined contents of ruptured epithelial cells.

All these glands mentioned seem to be but a combination of the more solid or basement tissues for the support of what are called gland-cells, which completely line their internal surfaces. These gland-cells, have no distinctive characteristics from true epithelium.

Many of the most difficult problems in physiology here come in and demand a consideration. One of which is, why that the epithelial cells of the mammary gland should secrete milk, while those of the cryptic glands of the stomach should secrete gastric juice. Such inquiries as these belong to

the highest domain of the science, and cannot be solved until we shall have become more thoroughly acquainted than we now are with the powers and properties of animal cell-membranes, considered as to their two inherent and permanent capacities, endosmosis and exosmosis.

It is thus that all our investigations upon cell-origin and development are continually shedding new light upon our vague ideas of what constitute the bases of all physiological science.

From what we have just said, let us see what constitutes our simplest idea of secretion. A single cell receiving by endosmosis into its interior the serum of the blood, and by this means elaborating its special character.

The function of *eliminating* effete matters from the blood does not most probably, I think, in the most marked instance we have in the body, belong to the agency of cells. This is the excretion of urine. Although we find the tubulæ uriniferi lined even to their termination with epithelium, yet my own microscopical analysis of these organs has led me to infer that this excretion must be viewed as a direct transudation from the blood into these tubes, in the Malpighian bodies. The functions of these last-named bodies cannot, I think, be otherwise satisfactorily explained in accordance with their anatomical relations. A considerable quantity of the water belonging to the urine may, perhaps, be derived from the escaped contents of ruptured epithelial cells lining the tubuli. But this watery fluid has probably no characteristics, and is like that from the same source, bathing serous membranes. And all that which distinguishes the urine as such, belongs to the functions of the Malpighian bodies. This portion of our subject, however, needs a further analysis.

The production of spermatie particles and of ova, although forming a part of this subject, as we have seen, cannot here be discussed. Their origin has been truly spoken of. But of themselves, they have important points and relations sufficient for a separate article.

The importance of the epithelial structures in the animal economy, and the high relations which they sustain, have thus in the foregoing pages been imperfectly delineated.

The subject is far from being as yet exhausted, in a physiological point of view; and as pathology is but an erratic physiology, so I am well assured that we can look at the former oftentimes for a fine elucidation of the true bearings of the latter, as far as relates to this tissue. But details of this character would scarcely belong to a purely physiological paper, and are therefore in this place omitted.

ART. VIII.—*On Cholera Asphyxia.* By JAMES F. GAYLEY, M. D., of Philadelphia.

IN a former number of this Journal (January, 1849), we discussed the etiology of intermittent and remittent fevers, and the following were our conclusions.

1st. That the lungs and the liver are the great decarbonizing organs of the body; that their function being complementary, the activity of that function is always in an inverse ratio.

2d. That, during winter, the lungs, from the part they perform in the generation of animal heat, are the more active organ. On the other hand, in summer the liver is the more active.

3d. That exposure to a low temperature repels the blood from the surface to the internal organs. If this exposure takes place in winter, the lungs being then the active organ, the brunt of the congestion falls on some part of the respiratory apparatus; hence we have catarrh, bronchitis, pleurisy and pneumonia as the prevailing diseases.

4th. But if this exposure takes place in summer, the liver being then in a state of stimulation, the force of the congestion falls on it. It becomes deranged, involving all those organs, more or less, whose blood has to pass through the liver to reach the heart. Hence we have bilious affections, as intermittents, remittents, dysentery, diarrhoea and cholera, as the prevailing diseases.

5th. That the pulmonary diseases of winter and of cold climates, and the hepatic diseases of summer and of warm climates, are both produced by the same agents acting on the system. The different effects being solely owing to the different modifications of the agents, and the different conditions of the system when exposed to their influence; and we might with as much truth say, that malaria was the cause of the one as of the other.

The truth of the first proposition is evident from a reference to the function of the lungs and liver in the inferior orders of animals, and in the *fœtus in utero*. In the reptilia, the blood from the inferior extremity and the viscera is decarbonized by the liver, while that from the upper extremity passes through the lungs. In the fœtus, during the period of intra-uterine life, the liver does the whole of the decarbonizing labour, the lungs being inactive until birth.

But this process of decarbonization subserves two other very important purposes. In the lungs it is the source of animal heat; in the liver it forms a fluid very important in the process of digestion. Accordingly, we find the normal temperature of air-breathing animals proportional to the amount of decarbonization performed by the lungs, and it is highest in those in which the whole of the blood passes through this organ, as in the mammalia and birds. The second proposition, therefore, follows immediately from the first,

and may be considered a corollary to it, viz., "that during winter, the lungs, from the part they perform in the generation of animal heat, are the more active organ. On the other hand, the liver is the more active in summer."

The third proposition we will pass over as having no direct bearing on the subject under discussion.

The fourth proposition we believe to be a very important one. It lies at the foundation of a proper understanding of all the diseases peculiar to the tropics, and to the warm season of temperate climates. In the article above alluded to, we endeavoured to follow it out in one direction, and to show how, under certain circumstances, it gives rise to intermittent and remittent fevers. Our object in the present article is to follow its workings in another direction, as the cause of cholera.

The blood from the stomach, small and large intestines, has to pass through the liver to reach the heart. The condition of the circulation in the alimentary canal, therefore, depends very much on the condition of the circulation in the liver. We know that in plants, so long as healthy action is going on in the leaves, the fluid taken up by the roots flows onward regularly. But if we arrest this action by shutting out the light and modifying the state of the atmosphere, the circulation ceases, although it is propelled by a constant endosmotic force *à tergo* of from one to three atmospheres. If we let in the light, and restore the normal condition of the atmosphere, the circulation is renewed. So in the portal circulation. While the liver cells perform their functions properly, the blood moves on regularly through the capillaries of the stomach and bowels; and these perform their functions in a healthy manner. But if any of the liver cells become deranged in such a manner that the normal function is not performed, we will have an effect produced in that portion of the portal circulation, which passes through them, similar to what we found in the circulation of the plant, when the function of the leaves was interfered with, viz., an arrest of the onward current. But the cœliac, mesenteric and hemorrhoidal arteries continue to pump in their usual quantity; "the supply is greater than the demand, and we have a glut in the market," viz., congestion. We have no anastomosing branches here through which this impeded blood can get around the liver, and thus reach the heart. Nature, however, has made provisions in the spleen for remedying this state of things for a time; so long as the spleen is able to accommodate the superfluous blood no bad results follow. But this state of things continuing, the spleen becomes at length filled; the engorgement extends to the splenic vein, thence to its tributary the inferior mesenteric; and from the inferior mesenteric to the vascular rete that lines the colon. Now, we know that whenever an obstruction to the venous circulation exists *à fronte*, an exudation of the serum takes place through the walls of the distended vessels. If we apply a ligature around the arm, so as to impede the circulation towards the heart, all the parts beyond the ligature become œdematous from the exudation of the serum of the blood in the distended vessels into the cellular tissue. In

the congested state of the vascular rete of the colon, this exudation takes place into the colon and gives us diarrhœa.

Such is the effect produced by the derangement of a *portion* of the liver cells. But the same agencies that produce an arrest of function of part of the organ may, under certain circumstances, act with such intensity as to arrest the function of the whole. And what will be the consequence? A little reflection will tell us that the stomach, small and large intestines, will in a short time be in a state of extreme congestion. With this we will have increased sensibility (irritability), and an exosmose of the watery portion of the blood of the congested part into the stomach and bowels. As it passes, it will wash away the epithelial scales of the mucous membrane. The increased sensibility in the stomach produces vomiting; in the bowels, frequent stools; and these stools consist of the washed off epithelial scales mixed with the exuded serum, and present the appearance of rice water. In short, we have *cholera asphyxia*.

The rapid arrest of the function of an organ of such importance as the liver, being the largest gland in the body, and the withdrawal of such a quantity of serum from the circulation, will produce changes in the character of the blood sufficient to account for the other symptoms met with in the disease.

The state of the blood drawn in different stages of the disease, and post-mortem examinations, favour the view here advanced. A circular letter on the former subject was addressed by the Medical Board of the British Army to thirty medical officers stationed in the Madras Presidency. The disease prevailed at most of the military stations, during portions of the years 1819–20–21–22. “It was established by replies to this letter, as well as by an immense amount of concurrent evidence, that the blood of persons affected with cholera is of an unnaturally dark colour and thick consistence. Those appearances were very uniformly expressed by the terms dark, black, tarry in regard to colour; and by thick, ropy, syrupy, semi-coagulated in respect to consistence. The change in the condition of the blood is likewise proved to be in the ratio of the disease; the blood at the commencement seeming to be nearly or altogether natural, and more or less rapidly assuming a morbid state as the disease advanced.” (*Johnston on Tropical Climates*, p. 355.) These are just the results that might be expected from the suspension of the function of the liver, and the consequent copious exudation of serum from the radicals of the vena portarum.

The post-mortem examinations made by the English army surgeons, in the East Indies, give the following results—“In the abdominal cavity, the peritoneal covering of the viscera present in general but little variation from the healthy standard; occasionally, indeed, the morbid accumulation of blood in the vessels of the viscera, imparting an appearance of turgidity and blueness, is evident even on their exterior surface. We also find them bearing marks of inflammation, especially when the patient may have lingered long before death. In other cases, the whole tube has had a blanched appearance, both

internally and externally. . . . The liver has been commonly found to be gorged with blood, but not always. . . . *The vessels of the mesentery have been very generally found to be uncommonly full of blood.*" (*Op. cit.* pp. 359, 360.

The Philadelphia College of Physicians appointed Drs. Jackson, Neill, H. H. Smith and Pepper, a committee to make post-mortem examinations of persons having died of cholera during its prevalence here last summer. The following is taken from their report.

"1. In the recent subject, the peritoneal coat, like all the serous membranes, was in all remarkably dry. The lubricating serosity was deficient in the serous membranes.

"2. The epithelial layer of the intestinal mucous membrane was in all the specimens either entirely removed, or was detached, adhering loosely as a pulpy layer mixed with mucus or an albuminoid substance.

"3. *Peyer's glands* were developed to a greater or less extent in all the cases examined.

"4. The *solitary glands* were also developed, and contained in the recent subject a minute quantity of white substance.

"5. The *villi* were denuded of their covering, but unchanged in other respects.

"6. The *capillaries* were entire, and manifested no departure from their normal state."

In addition to the above, I learn from Dr. Neill, who conducted the investigations, that the proper tissue of the liver was exanguious; but that the large blood-vessels were gorged with blood. This was also the condition of all the large blood-vessels of the abdominal viscera.

The engorgement of the large vessels of the intestines is given in both reports. The report of the English army surgeons is not clear in regard to the state of the liver. We know that the organ is composed of cells, which are the organ proper; the parenchymatous structure, which holds the cells—the little livers—together; and the ramifications of the portal vein, which are only a mechanical arrangement to supply the cells with the fluid out of which to elaborate their proper secretion. In making post-mortems, these distinctions ought to be kept in view. In the report under consideration they were overlooked. Doctor Neill's examinations were conducted with more discrimination. He found the proper structure of the organ exanguious, but the blood-vessels supplying it gorged. The appearance of the capillaries observed by Dr. Neill admits of an easy explanation. We have seen above, the *thickening* of the blood that takes place during the progress of the disease, and that this change is proportional to the time the disease has existed, and its intensity. Before death, this exists to such a degree as to prevent the blood from entering the capillaries. These, by virtue of the contractility of their walls, keep up a pressure on their contents, causing exudation, and this exudation continues until they regain their normal size. That the blood is too thick to enter

the capillaries is evident, from the large vessels being gorged with it. The appearance presented by the serous membranes in those cases examined by Dr. Neill may be accounted for, by the intense congestion arresting the normal vital action of the part, and substituting one purely physical—the exudation into the cavity of the canal in the direction in which the least resistance is offered; and this carries before it the epithelial layer of the mucous membrane, which gave the appearance presented by this membrane in the examinations. Without following out the principle any further in explaining the minutiae of the appearances presented, we will merely say that slight variations in the appearances presented after death do not militate against the theory here advanced. No agent, even if it acts uniformly, will produce precisely the same effects on all constitutions. But the cause of the disease here advocated (the arrest of the function of the liver) may exist in various degrees, from that of a few cells to the whole organ. In the details of the appearances presented after death, as well as the symptoms presented during life, we might expect a great variety. But there would be certain leading points in which they would all agree, “*Facies non omnibus una, nec diversa, sed talis decet esse sorores.*” And these points of agreement we have found in the gorged conditions of all the large blood-vessels of the portal system.

The principles of treatment are obvious. The great desideratum is to unlock the secretions of the liver by setting the cells to work. The question is how can this best be done? The experience of the profession proves to us that nothing will do this so well as calomel. This must be our sheet-anchor in this terrible malady. My plan during the past summer was to give it in doses of from ten to twenty grains, at intervals varying from half an hour to two hours, mixed with a little sugar, and laid on the tongue, and washed down with a little ice-water. I prefer this way of administering it, because it is rarely if ever thrown off. When given in pill or suspended in syrup, the irritability of stomach is such that it is apt to be ejected, before the material with which it is mixed can be dissolved by the liquors of the stomach; but when given as above, it almost invariably remains, and acts like a charm in quieting the irritability of the stomach. In connection with this, I used sinapisms to the abdomen and extremities, and frictions with dry flannel, with a view of determining the blood to the surface and thus diminishing the supply to the viscera *à tergo*, while the calomel was creating a demand *à fronte*. This I kept up until the equilibrium of the circulation was restored. In regard to the dose, the quantity given above is only an approximation, as I seldom weighed it. My custom was to carry a vial of calomel always with me, so that when called to a case no time might be lost in sending for it. I poured out what I considered the dose required for the case before me, and administered it as detailed above. Some may object to what appears to be a wholesale mode of giving calomel; and well they might, if the mucous membrane of the stomach was in a normal state. But let it be remembered that it is being loosened and washed away by the constant serous exudation. This, in

connection with the fulness of the blood-vessels, will interfere with the process of absorption. It is probable, therefore, that only a portion, and in some cases a very small portion, is absorbed. These doses were given only until the violence of the attack was broken. The number required to produce this effect varied from two to five. No bad consequences followed the use of the mercury. In one case slight ptyalism was produced, which yielded readily to the usual treatment.

In some cases the convalescence was rapid. In others, there remained a state of system characterized by considerable thirst, jactitation, debility, and occasional watery yellowish stools. This yielded to small doses varying from one-fourth to one grain, three times a day. With several of these I tried an acidulated solution of quinia, but the stomach would not tolerate it. At a later period, however, when the function of the liver was re-established, as indicated by the improved stools and the disappearance of the thirst and jactitation, I found quinia to have a very happy effect.

Such was my treatment of the disease during the past summer. Out of thirty-five cases, thirty-two recovered. Some of them were very bad cases. The three that died were beyond the reach of remedies when I was called. There was no pulse at the wrist, and sinapisms had no more effect than if applied to a dead person. In such a state of system, it is to be presumed that internal remedies would be as inert as external applications. This presumption is strengthened when we call to mind the tendency of the disease to destroy the mucous membranes. I never used opiates, camphor, brandy, capsicum, chloroform, or any of the thousand-and-one remedies recommended in this disease. Their multiplicity proves their inefficiency. The spasm and debility I looked upon as the effect of the state of things detailed above, and I considered that the best antispasmodic and the best stimulant which would start the cells of the liver to work. There is much sound philosophy in the aphorism of the father of medicine, "*sanguis solvit spasma*." If we get rid of the congestion and equalize the circulation, the spasm will disappear.

It affords me pleasure to append the following extract from the second annual report of the medical department of the Siam mission of the Presbyterian church, located at Bangkok, dated October 1st, 1849, and signed by Dr. House, detailing his treatment of cholera during its recent visitation to that city, as it agrees in a remarkable manner with my own. He says:—

"With a thousand dying daily on his right hand and on his left, for weeks together, as may be imagined your missionary physician found abundant occupation, though the smitten people, palsied with fear, seemed to deem it useless to contend with death, and, at first, comparatively few bethought themselves of the foreign doctor, or appeared to think his or any art could avail. Nor, indeed, would it, save perhaps to check the complaint in its earliest and forming stage, had not a gracious Providence been pleased to direct his mind, perplexed and wavering, among the multiplicity of opposite remedies advised, to one simple course of treatment for the disease, which

soon evinced such results that no other was thought of or required. This course consisted in the administration of *calomel in large doses*; a scruple or even forty grains being given at the outset, followed up at intervals of half an hour or an hour, with other scruple doses of the same remedy till relief was obtained. From one to four were generally required, though as many as seven have been given, and in one case two hundred and sixty grains were taken before the disease was subdued. Of course, unless the disease was most unequivocally marked, and admitted of no delay, milder means, such as mixture of laudanum and essence of peppermint, thirty drops each in a wineglassful of water, with external applications, were at first resorted to, and would often prove successful; but these failing to arrest the symptoms, no time was lost in giving the grand remedy.

"Your physician's experience with calomel, given as above stated, and *before the pulse had ceased* at the wrist, inclines him to look upon it almost as a specific for the cure of epidemic cholera. But two cases out of forty-five, to whom it was thus administered, disappointed his hopes; all the rest recovering, though many of them were not severely attacked. Nor did any apparently evil consequences seem to result from the exhibition of these immense doses of calomel, beyond a moderate salivation, and from this even several were exempt." (*Foreign Missionary*, Feb. 1850.)

In conclusion, I will take the liberty of saying that my treatment was the *result* of the opinion I had formed of the *cause* of the disease; and this opinion was reached by following out the principle expressed in proposition 4th, quoted at the beginning of this article. It was not a thing of accident, but a conclusion arrived at by philosophical induction.

ART. IX.—*Notice of certain Peculiar Bodies observed in the Human Subject.*
By JOSEPH LEIDY, M. D. [With five wood-cuts.]

IN the winter of 1845, while engaged dissecting a human subject, I observed, deposited in some of the tissues, certain bodies of a character totally different from any others known to me. Since then up to the present time, during the course of every winter, I have noticed the same kind of bodies in several white, more or less emaciated subjects, in the dissecting-room of the University of Pennsylvania. They are of a yellow-cream colour, very irregular in form, and vary in size from half a line up to one-fourth of an inch. The tissues in which they are found are the papillary layer of the dermis, the areolar tissue, and the voluntary muscles.

In the papillary layer of the dermis, the course of deposit of the matter composing the bodies is in some measure determined by the lines of the papillæ tactus, as is indicated in Figure 1, which represents one of these bodies deposited in a portion of the papillary layer of the dermis from the palm of the hand. Wherever the deposit exists, the papillæ tactus are obliterated.

In the areolar tissue, beneath the skin, or between the muscles, the bodies have no definite form or course, as seen in Figure 2.

In the muscles, the direction of the bodies is to some degree determined by the course of the fibres, as is observed in Figures 3, 4, and 5; and where they exist the muscular substance is obliterated.

When first noticed, I thought these bodies might be deposits or degenerations of the normal tissue into fat, or else entozoic cysts; but upon closer examination they proved to be neither.

Upon rupturing one of them—for they appear to be bound by a delicate, limitary film—a thick viscid matter exuded, which, submitted to the microscope, exhibited a seroid fluid containing numerous granules possessing a very great uniformity in size, measuring the 1-14,285th of an inch, in diameter, and endowed with a very active molecular motion, amounting to a vibration equal to nearly four times their own diameter.

The character of these bodies I am unable to solve. Are they connected with some form of disease? and have they been before noticed upon the skin of certain patients?

REFERENCE TO THE FIGURES.

Fig. 1 represents one of the peculiar bodies (*a*) deposited in the papillary layer of the dermis of the palm of the hand, magnified 20 diameters. *b*. Papillæ tactus.

Fig. 2. One of the peculiar bodies deposited in the areolar tissue, from beneath the skin of the wrist, magnified 10 diameters.

Fig. 3. Do. from the sartorius muscle, magnified 7 diameters.

Fig. 4. Do. from the biceps flexor cubiti muscle, magnified 9 diameters.

Fig. 5. Outline of do., of a very irregular form, from the extensor carpi radialis longior muscle, magnified 10 diameters.

Fig. 1.

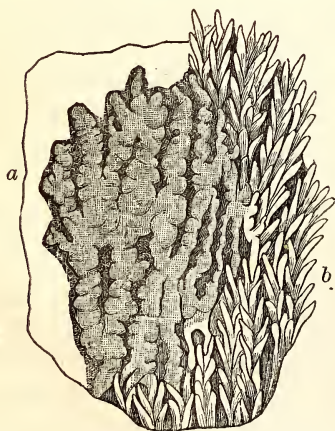


Fig. 2.

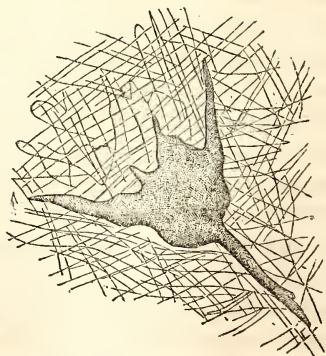


Fig. 3.

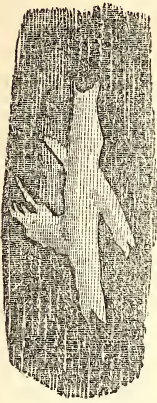


Fig. 4.

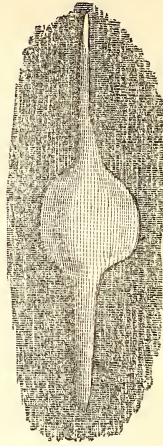


Fig. 5.



ART. X.—*Ligature of Internal Iliac Artery for Aneurism.* By GILMAN KIMBALL, M. D., of Lowell, Massachusetts.

A. W. WENTWORTH, a machinist, 35 years of age, entered the Lowell Hospital November 15th, 1849.

The account of his case, as given by himself at the time, is briefly as follows : As long ago as 1843, he first discovered a small tumour on the back part of his thigh ; hard, pulsating, with no pain, and causing neither inconvenience nor anxiety.

It remained in this state till some time in 1848, when it began to increase in size, and trouble him somewhat in sitting.

He now showed it to one or two physicians, who assured him it was nothing more than a fleshy tumour, that might be removed at any time with perfect safety.

In July, '49, while ill with dysentery, he fell under the care of Dr. Savory of this city ; and during this illness, the tumour was for the first time intelligently examined, and its true character made known to the patient. It was now something larger than a goose-egg, and situated directly over the ischiatic notch.

The throbbing and peculiar *souffle* were present in a very marked degree, and severe pain was occasionally felt shooting down the back part of the thigh and into the calf of the leg. Indeed, every circumstance indicated that the tumour was aneurismal, and that it involved, probably, some branch of the internal iliac artery.

The case was subsequently examined by other surgeons, who expressed the same views as to its nature ; and suggested, as had been previously done, the ligaturing the internal iliac artery, as the only means of cure.

Having now become acquainted with the importance as well as danger of his disease, and having also been fully apprised of the nature and risk of the only remedy that could be proposed for its cure, the patient resolved that he would resume his work, hoping that the fearful alternatives of an operation might at least be a long while postponed, if not avoided altogether. In this hope, however, he was disappointed. About the 10th of November, the pain in the thigh and leg increased, and a severe throbbing pain was felt for the first time in the lower part of the abdomen.

His work now became irksome, so much so, that on the 14th of the same month he was obliged to desist from labour altogether.

Alarmed at the progress the disease was making, he looked to the operation as his only hope, and resolved to take the hazard of it with as little delay as possible. With this view, he entered the hospital at once, and in four days after, Nov. 19th, the operation was performed. The mode of proceeding was as follows :—

The patient having first been placed on a bed suitably prepared for the pur-

pose; and having been duly brought under the influence of chloroform, an incision six inches long was made immediately above, and to a certain extent, parallel to Poupart's ligament, beginning at a point just external to the spermatic cord, as it passes through the external ring running outward for the distance of three inches, then turning more directly upward and terminating on a line about midway between the anterior spinous of the ilium and the umbilicus. The abdominal muscles and iliac fascia were next cautiously divided, and at the lower end of the incision, the peritoneum being carefully raised brought to view the external iliac artery. From this point, the peritoneum was still further raised from its pelvic connection by running the forefinger of the left hand along the inner border of the psoas muscle, till it reached the promontory of the sacrum.

The internal iliac was now readily traced in its descent from its point of bifurcation; and while the forefinger of the left hand still rested upon it, a ligature was carried under it by means of a common aneurism needle, and the vessel secured by the aid of an assistant, about an inch from its origin.

The tumour being now examined, was found to be somewhat diminished in size, and its pulsation to have entirely ceased. No accident or embarrassment of any kind occurred in any step of the operation. No vessel having been cut of sufficient size to require tying, the amount of blood lost was of course very inconsiderable, not more than two or three ounces. Finally, the wound was brought together with two or three sutures and adhesive straps, and covered with water dressings.

Nov. 20th. Morning after the operation.—The night had been tolerably comfortable, but for the prolonged effects of chloroform which still produced more or less nausea. Pulse 108; considerable thirst. Abdomen not swollen, nor in the least tender, except in close neighbourhood of the incision.

21st. Increased restlessness for the last twenty-four hours. This morning, however, more quiet, apparently from a dose of opium taken the evening before. Nausea somewhat abated; pulse 106; thirst the same. 7 P. M. Abdomen a little swollen and tender; occasionally hiccup. Still complains of the effects of chloroform.

22d. Night restless, though not without some sleep; pulse 112, full and soft; swelling of abdomen not increased; nausea, thirst and hiccup about the same. Bowels being constipated, ordered ten grains of calomel. 7 P. M. Continues restless; rather more pain in abdomen; cathartic not having operated; ordered eight grains more calomel.

23d. Cathartic operated freely during the night, producing some relief. An uncomfortable night, however, and without sleep. Abdomen less swollen and but slightly tender. Pulse 90, soft and full; some nausea and hiccup still, but not so troublesome. The wound discharges pretty freely, some pus, but mostly the remains of blood which had been retained in the wound at the first dressing.

24th. Had a good night; slept most of the time; pulse 90; no pain, and
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scarcely any tenderness of the abdomen; discharge more purulent. Asks for food.

25th. Remains comfortable, but a good deal prostrated. Sutures have given way, and adhesive straps mostly detached by the abundant discharge. Still no soreness or swelling of abdomen. No indication of peritonitis; pulse 86; complains of bad taste of mouth. Skin rather sallow.

26th. Has been more comfortable for the last twenty-four hours than at any time since the operation. Appearance generally about the same. Complains, however, of soreness of the tumour, which appears slightly inflamed. Perspires freely during sleep.

27th. Although appearing pretty well at present, the last twenty-four hours have been uncomfortable. Increased restlessness and fever. Pulse 110. Constant motion of left leg, drawing up and extending it constantly. Wound discharges very freely, its edges disposed to separate considerably. No appearance of adhesion or granulation in any part of it. Still no sign of peritonitis. Bowels moved regularly without medicine, for four days past. Urinates without pain or difficulty (which has not been the case for four days past). Ordered quinine in grain doses, every six hours. 7 P. M. A restless day; considerable fever; pulse 110; skin dry; thirst; breathing hurried; inclined to wander. Discontinued the quinine.

28th. Does not seem so well as yesterday; night restless and sleepless; pulse 116; thirst; dry tongue. Skin hot and dry. 7 P. M. Appearance the same as in the morning. No movement of the bowels since day before yesterday. Ordered six grains blue pill.

29th. Appears more comfortable; slept considerably through the night, and seems refreshed. Fever less; pulse 90. Complains of sore mouth and tongue, which upon examination proves to be covered with aphthæ. Wound discharges freely, but is not healing. Edges still disposed to separate and require to be brought together with considerable force with adhesive straps, and to be dressed as often as every six hours. Bowels not moved. Ordered another blue pill.

30th. Appearances same as yesterday.

Dec. 1st. Does not seem so well as yesterday. Had a severe chill in the night, followed with a good deal of fever. Slight cough and expectoration of mucus tinged with blood. Bowels moved once.

2d. More comfortable. Slept pretty well, and says he is greatly refreshed, and feels quite well, but for the sore mouth. Had another chill sixteen hours after the first, but less severe, and followed by less fever. Sweats profusely during sleep. Cough and expectoration much diminished.

3d. No material change since yesterday. Has had two slight chills in the last twenty-four hours. Cough and expectoration almost entirely ceased.

4th. Called up in the night and found secondary hemorrhage. Blood still flowing freely from the whole extent of the wound. Called Dr. I. O. Green in consultation, and considered the question of making a desperate attempt to

secure the primitive iliac artery. Decided that it was inexpedient. Hemorrhage ceased after the loss of sixteen or twenty ounces of blood.

The patient was frankly informed of his danger, still he quietly fell asleep and so remained for several hours.

5th. Remarkably comfortable for the last twenty-four hours. No return of hemorrhage. Appearances generally the same as before it occurred.

6th. Hemorrhage returned yesterday afternoon, thirty-six hours from the first attack. It soon ceased, however, and the night was passed very comfortably, till about 5 A.M., when the bleeding returned again with increased violence, and terminated the life of the patient at half-past eight, being the eighteenth day after the operation.

Post-mortem six hours after death.—Upon removing the dressings, and clearing away the partially coagulated blood which had been pushed between the edges of the wound during the final hemorrhage, it was remarked, in the first place, that there was no appearance of healing, no granulations, the edges of the incision still remaining as distinctly defined as at the moment of the operation. At the bottom of the wound, particularly in the neighbourhood of the ligature, a large quantity of pus was found, mixed with blood, and extending in various directions to a considerable distance under the peritoneum. The peritoneum itself, so much of it as had been torn up and exposed in the course of the operation, was very much thickened; and, upon being cut open, was found entirely free of all appearance of inflammation.

A portion of the primitive, and so much of the internal iliac arteries and its branches as could be conveniently got at, including of course the part which had been ligatured, were now carefully removed and examined. The portion of the vessel between the ligature and the bifurcation being slit open, was found entirely empty. No trace of coagulum; no signs of inflammation on its inner surface. The part immediately embraced by the ligature had begun to give way, disclosing a very small aperture, sufficiently large, however, to account for the fatal bleeding.

The body was now turned upon the face, and the examination continued posteriorly. The tumour which had existed previously to the operation was observed to have entirely disappeared; and comparing one side with the other, the only thing indicating the one affected was a slight discolouration over the left ischium. In cutting through this part, both the skin and subjacent parts were found somewhat condensed, and the muscular fibres paler than natural, and intermixed with an unusual quantity of cellular tissue; a condition supposed to have been induced by long continued pressure in sitting! Continuing the incision deeper down toward the supposed location of disease, it was soon found that no sac, or any other usual evidence of aneurism was to be found. Near to the point, however, where the gluteal artery makes its escape through the ischiatic notch, several sacculi or pocket like cavities were observed leading off in several directions, one of them upward under the edge of glu-

teus minimus, and another behind the origin of the pyriformis muscle as it passes out of the pelvis. These cavities were perfectly defined, and lined by a thin membrane of condensed cellular tissue, over which was distributed a net-work of vessels. Still, the evidence of aneurism was too equivocal to be satisfactory; and it now became a matter of regret that this part of the examination had not been made before the parts *within* the pelvis had been disturbed. But upon a further examination of the vessels which had already been removed from this region, a more satisfactory explanation was made out in the discovery of an aperture through the walls of the internal iliac artery, about two thirds of an inch below the point of ligature.

This aperture was nearly the size of the calibre of the artery, and closed over by a thin coagulum loosely attached to its edges. Its exact relations to the ischiatic notch could not, of course, be determined, inasmuch as the parts surrounding it had been previously cut away with the vessels themselves. It seemed obvious, however, that the aperture in question, and the sacculi discovered outside the pelvic cavity, must have been in communication with each other, and thereby produced the tumour and its accompanying symptoms of aneurism; but for reasons already given, this connection could not be demonstrated, and could only be considered as a matter of reasonable inference.

As regards the fatal result of the case, it would perhaps be scarcely worth while to refer to any particular circumstance which might possibly have had an influence in producing it. That the patient should finally die of hemorrhage is nothing remarkable; but that there should have been such an entire absence of all healing action, and especially that there should have existed such a positive destitution of fibrine as apparently to prevent the due formation of coagulum in the ligatured vessel, is not only remarkable, but quite unprecedented in all similar instances on record. Without drawing any conclusions from these facts, they are nevertheless sufficiently important to be stated; and more particularly since the question has already been raised in the minds of some, whether they were not connected with the large amount of chloroform inhaled during the operation.

LOWELL, *March 10th, 1850.*

ART. XI.—*Abstract of a Case of Constitutional Irritation following Vaccination.* By CHAS. E. BUCKINGHAM, M. D., Physician to the Boston House of Industry.

B——, a farmer, twenty-five years of age, of previous robust health, residing in the western part of Massachusetts, till within a few weeks of his death. Father died of erysipelas many years ago. Mother and two brothers now living and well. He was the eldest child. Two brothers died in early

childhood—cause unknown. I could learn after his death that there had been no sick animal on his farm; that he had, so far as was known, no communication with any such, nor had he any occasion to handle hides. He was vaccinated on Thursday, Aug. 28th, 1849, by a physician in his vicinity at the same time, and it was supposed with the same virus that a younger brother was vaccinated with. B. had been successfully vaccinated before; the brother had not, and in his case the disease was taken and successfully terminated. In this case, the vesicle was described as abnormal. The patient was as well as usual till Aug. 31st, when slight febrile action took place, he having in the meantime come to Boston.

Sept. 1st, he took an emetic, and on the 2d a cathartic dose. Both operated freely. I was first called to him at 9 P. M. *Sept. 3d*.

Condition.—Complete anorexia; great thirst; headache; sleeplessness; pain in back; eyes and hearing normal; urine free; pulse 120, full and strong; decubitus dorsal. His late vaccination was not known at this time. Got a saline mixture, consisting principally of bicarbonate of soda and chlorate of potassa.

4th. Febrile action less; has pain in calf of right leg; no tenderness, redness, swelling, or heat. *R*.—*Tr. saponis et opii* to part.

5th. Pulse 90; appetite returned; pain nearly gone.

6th. Leg still painful; appetite good; secretions abundant; omit medicine. *R*.—*Aq. ammoniæ, spir. terebinth. āā partes.* *M*. To the leg.

9th. Pulse 84; appetite good. No sleep last night on account of the pain in the calf, and in the sole of right foot; has had a sinapism to the foot, with partial relief; no dejections for twenty-four hours; whole of right calf swollen; a circumscribed red spot one and a half inch below head of right fibula, covering about two square inches; omit medicine and apply six leeches; bleeding to be encouraged by poultices. *R*.—*Magnesiæ sulph. ʒj, now.* *R*.—*Potassæ chloratis ʒij; Acidi hydrochlorici ʒss; Syr. aurant. cort. ʒviij.* *M*. ʒj to be taken every three hours.

10th. Patient was seen, in consultation, by Dr. H. G. Clark. Redness more diffused; leg much swollen, and œdematous from knee to heel; pain confined to the spot of yesterday, which is, for the first time, tender; no headache or thirst; eyes and hearing normal; neither delirium nor sighing; no appetite; tongue red at its tip, and in other parts covered with a thick creamy paste; pharynx the same; pulse 88, full. Repeat leeches; omit medicine. *R*.—*Quiniæ sulph. gr. j* in solution every four hours. *R*.—*Pulv. ipecac. comp. gr. viij* at bedtime.

11th. Had headache after second dose of quinia, and it was omitted; slept well all night; perspired freely; no headache; no dejection; pulse 100, full and soft; tongue, &c., as yesterday. A painful spot exists on the inside of the other calf; resume medicine of yesterday and nourishing diet.

12th. Slept well; quinia acted as before, and was omitted after second dose; less pain and swelling in right leg; pain with hard tumour in the spot on left

leg; no enlarged glands to be discovered in any part of either groin, nor in either lower extremity; omit the quinia and resume the medicine of the 9th; continue the Dover's powder gr. iv at night. Good diet, with cider or champagne, P. R. N.

13th, 9 A. M. Same as yesterday; pulse 100, full and soft; no dejection. Attention was called to a hard, red, circumscribed swelling on the left forearm, similar to the others; in examining which, found the remains of an irregular vaccination, of which I first learned the history, as above. Continue treatment; simple enema.

12½ P. M. Dr. J. C. Warren saw him in consultation. He advised a continuance of the present treatment, with the Tr. acid. sulph. for a drink. Pulv. ipecac. gr. x, now.

To the 16th of September there was no apparent change, except a diminution of the swelling of the right leg. Treatment was continued.

16th. Dr. W. J. Walker saw him, in consultation, at evening. At that time the swelling of the right leg was decidedly less. That of the left leg hard, red, and excessively tender. The right elbow was red and swollen. The right eye red, swollen, and painful about orbit; no conjunctival redness; tears trickling over face; pulse 120, full, soft, and dicrotic; respiration slow and distinct, with occasional sighing; no delirium; tongue perfectly steady, when protruded; face somewhat livid; no dejection for two days, except from enemata; has taken brandy and water to-day; omit medicine. R.—Hydrarg. submur. gr. ij; Pulv. opii gr. ½. M. Every two hours. Wine or brandy freely.

17th, 8½ A. M. Slept well; pulse 112, of same character; respiration 16; no pain; no delirium, except on waking; tongue as before; no dejection; takes no food; swelling of legs less, otherwise as at last report; may have ale, porter, or champagne. Continue medicine.

7 P. M. Dr. Walker saw him again. Pulse 136, and of same character; respiration 16; occasionally sighing; memory good; no fetor; has taken Oj each of champagne and ale. Continue treatment.

18th. Had a good night; pulse 112; respiration 16; nose much swollen, dusky red, and painful; about a dozen papules, hard, red, and shot-like, scattered over forehead, face, back, and legs; no glandular enlargement.

12 M. A few more papules on abdomen; the others are becoming pustular, and a few are umbilicated.

10 P. M. Pulse 112, full, soft, and dicrotic; tongue dry and cleaner; no fetor; pustules larger, other swellings less; has had two small and offensive dejections. R.—Hydrarg. submur. gr. ij; Opii gr. ⅔. M. Every two hours.

19th. 8½ A. M. Two dejections, with urine; tongue dry, black, and cracked; redness and swelling of whole upper face; papules increasing in number, and pustules in size; a few of them umbilicated; no glandular enlargement. Rub in Ung. hydrarg. ʒss in axillæ and groins.

8½ P. M. Pulse 120; respiration 20, and noisy; sordes on teeth; no mer-

curial fetor; tongue dry and cracked; takes brandy and water. Resume medicine of the 9th.

20th, 10 A. M. Pulse 120, more firm, but not so full; respiration 32, laboured, no râles; numerous black, pasty dejections; took Oss of brandy in the night; restless, and occasionally wandering; easily roused, and speaks sensibly, but soon falls asleep again; pustules increasing in size and number, some of them as large as good-sized peas; knuckles of right hand swollen; both sides of face red, swollen, and œdematous; right leg of normal size, and appears well; left leg the same, with the exception of slight tenderness; swelling on left forearm soft and fluctuating; no glandular enlargement, nor mark of absorbents.

9 P. M. Constantly delirious; unable to drink; frequent involuntary dejections, and urine; hands tremble; pulse 134, feeble; respiration 36, noisy and husky; sounds and impulse of heart normal; many of the pustules drying; scab of vaccination came off of arm; erythema and œdema of scalp. Omit medicine.

21st, 10 A. M. Delirious all night; takes nothing; insensible; no dejections; pulse 134, soft, and moderately full; respiration varies from 30 to 40, occasionally like that in hydrophobic paroxysm; heart's impulse strong; first sound loud, second sound scarcely perceptible.

5½ P. M. Died. The body was removed early the next day. No autopsy allowed.

ART. XII.—*A Case of Wound of the left Ventricle of the Heart.—Patient survived five days;—with remarks.* By JOHN W. H. TRUGIEN, M. D., of Portsmouth, Va.

ON the night of March 18th, 1850, at about eight and a half o'clock, I was hastily summoned to visit a stout young negro man æt. 21, who a few minutes previously, in a personal rencontre with another negro, had been stabbed in the chest. I found the man lying on the floor in a state of the most profound collapse. His body was as cold as a block of marble, and covered with profuse, cold, clammy sweat; nor could the nicest touch of the finger, or the ear applied over the region of the heart detect either radial or cardiac pulsation. The only indication of remaining animation was the occasional utterance of groans, and the application of the hands to the pit of the stomach, as if to relieve pain in that situation. On stripping open the shirt, a wound of half an inch in size was discovered in the left precordial region, equi-distant from the nipple and left edge of the sternum, and just over the costo-sternal cartilage of the fourth rib. There was little or no hemorrhage from the wound. On introducing the probe, it could be carried as far as the

costal cartilage, but was then turned a little to the right when allowed to pursue its own course. My first impression on seeing the man was that the heart had been wounded, and that the case would terminate fatally. The arrest of the probe, however, and its deflection to the right caused me to come to an opposite conclusion. The extreme degree of collapse was attributed to other causes than the wound, viz., to the presence of crude indigestible food in the stomach, giving rise to intense pain there, or the impression of a blow or kick thereon, as suggested by my friend Dr. J. N. Schoolfield, who the next day visited the patient with me. The circumstance of his having vomited during the night a large quantity of crude ingesta, seemed to confirm this opinion. The result, however, will show that it was erroneous, and that the first impression was correct. Notwithstanding the efforts made to induce reaction, he continued in the state above described for five or six hours. At last, however, the forces of the system rallied, and by the following morning a moderate and equable reaction had taken place. No complaint was made of the wound, and there were no symptoms present to give rise to the supposition that the cavity of the chest or the heart had been penetrated. Respiration was normal, and the patient able to take a full inspiration without pain. There was, however, considerable tenderness and pain on pressure over the epigastrium, but which soon yielded to the application of a vesicant and the internal use of blue mass, opium and ipecac. The strictest maintenance of the horizontal position, together with the observance of perfect quietude were enjoined. This, together with the use of slop diet, constituted the treatment of the case. The wound was received on Monday night, and the patient continued to improve until Saturday, warranting the prognosis which was given of a favourable termination. On the last named day, however, in positive disobedience of orders, he went out and used other improper exertions. At eight o'clock at night I was again sent for, and arrived only in time to see him die, which event took place in about five minutes after I reached him. He had been sitting up a few minutes previously, and conversing cheerfully when he suddenly complained of feeling very badly, sunk down from his chair, and expired.

Autopsy, sixteen hours after death, by Dr. J. N. Schoolfield and the writer. The wound in the external integuments had completely healed. On removing the sternum, together with the costal cartilages, a large quantity of serous fluid escaped from the chest. A wound of two-thirds of an inch in extent was found traversing in an oblique direction, and completely perforating the fourth costo-sternal cartilage; passing thence through the pericardium, it was traced into the substance of the right ventricle, a line or two to the right of the septum-ventriculosum. Its farther course was traced from right to left through the wall of the right ventricle, without, however, penetrating its cavity; thence through the septum into the wall of the left ventricle, and through this into its cavity. Through the opening thus made, the blood had escaped into the pericardium, until it put a stop to the movements of the heart. About a pint

and a half of blood, partly fluid and partly coagulated, was taken therefrom. The wound through the pericardium had completely cicatrized, as well also as that of the heart for two-thirds of its extent. The preparation now in my possession shows this very plainly. A circle of inflammation about the size of a quarter dollar is there seen to surround the wound of the heart.

Remarks.—It has not been many years since all wounds of the heart were thought to be *instantly* and *necessarily* fatal. This, though not now the prevailing *medical* belief, is yet almost universally accredited by the *laity*. The numerous cases on record of protracted survivorship of wounds of the heart, some of them of the most severe character, as well as the case just detailed, show conclusively that death does not instantly ensue upon their reception. Indeed, from the researches of M. Ollivier upon this subject, it would appear that instantaneous death from wounds of this organ are of much less frequent occurrence than is generally supposed. Thus, out of twenty-nine cases of wounds of the heart collected by that gentleman, only *two* proved fatal within forty-eight hours, the others in from four to twenty-eight days.

Much time and labour have been expended in the collection of cases of prolonged survivorship of wounds of this organ. Some of the cases reported are of such a character as to be almost incredible, but for the undoubted veracity of their authors.

Dupuytren has reported several very remarkable cases; and Dr. Beck, in his work on Medical Jurisprudence, has also brought together quite a number. In the October number of the *Am. Journal of the Medical Sciences*, a case is recorded which was originally presented to the New York Pathological Society, by Dr. W. S. Bowen, in which the patient survived a wound of the heart nine days. And in some cases collected by Dr. J. R. Coxe, and published in an early number of the same journal, life was in numerous instances prolonged for sixteen or seventeen days. Nay, the case is on record of a negro boy who survived a wound of the heart sixty-seven days, and was at one time able to walk about. (Reported by Dr. Ramsay, of Tennessee, in the *Western Journal of Med. and Phys. Sciences*, vol. i. p. 329.)

But, are wounds of the heart *necessarily* fatal? Dr. Dorsey says "there is reason to believe that the heart has often been wounded without fatal consequences." And Baron Dupuytren gives it as his opinion that wounds of this organ are not necessarily fatal. Mr. Alfred Taylor, in his Medical Jurisprudence says, "until some clear instances of recovery from penetrating wounds of the cavities are reported, the majority of practitioners will continue to look upon them as *necessarily*, although not immediately fatal. But, at least *one* case of recovery is on record (see *Lond. Med. Gaz.*, vol. xvii. p. 82), and the case just reported, though terminating in death, has nothing about it to lead to the conclusion that recovery was impossible. On the contrary, the complete cicatrization of the wound through the pericardium, and the almost complete closure of the wound of the ventricle render it highly probable that the patient would have got well but for his imprudent exertions.

In conclusion, we think this must be regarded as a very interesting case, as it illustrates that wounds of the heart are not instantaneously fatal, and though itself terminating unfavourably, that they are not *necessarily* so. It shows, also, that wounds of this organ may cicatrize under circumstances favourable to such a process—and in a medico-legal point of view, is highly interesting. As suggested by a highly esteemed medical friend, an important therapeutical lesson may also be deduced from this case, viz., the necessity of the most perfect and absolute rest, and the observance of the horizontal position for a longer time than is usual in the treatment of such cases.

PORTSMOUTH, Va., April 23d, 1850.

ART. XIII —*Poisoning by the Seeds of Jatropha Curcas.* By R. J. FARQUHARSON, M. D., Assistant Surgeon U. S. N. Communicated by T. Harris, M. D., Chief of the Bureau of Medicine and Surgery, U. S. N.

Two of our men, being ashore, tasted the seeds of the *Jatropha curcas* (which grows in great abundance on these islands), and finding them pleasant, ate of them, one to the extent of a handful, the other being satisfied with three or four. In both cases, vomiting and purging of a violent character came on in the course of an hour; and in the instance of the man who had eaten but a small quantity, the effect only extended thus far. In the other case, more alarming symptoms rapidly supervened. The muscles of the extremities were contracted by violent spasms; the patient was affected with dizziness and vertigo, accompanied by great restlessness; the respiration was quick and panting; the skin became cold and moist, and the pulse small, thready, and intermittent; the heart's action was very irregular, and so weak that the impulse against the walls of the chest could with great difficulty be perceived. These effects of the poison upon the nervous system continued for the space of several hours. The seeds eaten were ripe, and of the kind used in small quantities by the inhabitants as an active purgative.

The treatment consisted in the free use of anodynes and stimulants, after the continuance of vomiting and purging for a time rendered it probable that all the offensive matter had been discharged from the intestinal canal; together with the application of a large mustard poultice during the state of depression. About five hours after the commencement of the attack, reaction occurred; and shortly afterwards the patient fell asleep, and waked the next morning with no other ill effects remaining than a slight irritability of the stomach and considerable debility.

U. S. Schooner *Taney*, PORTO PRAYA, Cape de Verdes.

ART. XIV.—*Results of Fifteen Operations for Lithotomy.* By P. C. SPENCER, M. D., of Petersburg, Virginia.

IN the following operations, performed within the last fifteen years, in Petersburg, Va., the instrument used was the lithotome caché, or the bilateral improved instrument of Baron Dupuytren.

CASE I. A free boy, four years of age, was operated on in September, 1833. Drs. Theophilus F. Gilliam and Birchett were present. From some unknown cause he died in the course of the night. His parents refusing positively to allow any kind of examination to be made, and as the loss of blood was very inconsiderable and nothing unusual occurred in the operation, we were totally at a loss how to account for his death, unless it was from a nervous shock given to the system. The calculus extracted was about the size of a pigeon's egg.

CASE II. Mr. Edward Ragsdale, of Virginia, aged seventeen years, was operated on October 1st, 1835. Drs. L. White, of Petersburg, and Morrison, of Brunswick county, assisted in this operation. We found a very large calculus incised a little behind and laterally to the prostate gland, and so completely imbedded as to require considerable force to separate it from the wall of the bladder.

This operation was performed about fifty miles out of town, and I was unable to see the patient as often as I wished. For a few days after the operation the case appeared as though it would do well. Later, however, he fell back, and steadily declined, and died on the fourteenth day. This result was not altogether unexpected, and was attributed to the great delay on the part of the patient in assenting to the operation, his weak condition, and the severity of the cystic irritation, which had so long existed; for he would only submit to the knife in the last extremity.

CASE III. A slave, aged thirty-five years, operated on in May, 1837. After the result of the two previous cases, I invariably placed the patient under preparatory treatment, varying the treatment according to the circumstances, and witnessed the happiest results. In this operation I was assisted by Dr. L. White and several students of medicine. We removed a very large calculus. The patient passed his urine naturally on the eighth day, had no fever of consequence, was walking about on the twentieth day, and in the course of a month returned home cured.

CASE IV. A slave, aged eighteen years, was operated on May 16th, 1837. In this operation I was assisted by Dr. L. White. We removed a very large number of calculi, which we found this bladder contained, many of which were so fragile that they were broken to pieces in attempting to bring them away. This patient, much to my astonishment, but more to my pleasure, passed his urine naturally on the fifteenth day, had no fever of consequence, but little after treatment, and returned home about the fortieth day cured.

CASE V. J. L. Long, of Virginia, aged seven years, was operated on November 21st, 1838. I was assisted in this operation by Drs. L. White, Cox, Michie, and several students of medicine. We removed a calculus of medium

size. On the fifth day he passed his urine naturally. His recovery was rapid, and he returned home on the twenty-fifth day cured.

CASE VI. Ripley Maggett, of Virginia, aged nine years, was operated on in May, 1839. Drs. Robinson, White, and Jones assisted in this operation. I made an opening into the rectum, and found it exceedingly difficult to effect a union of the parts. The only remedy resorted to was the solid stick of lunar caustic, introduced into the rectum on the finger of the left hand, an operation which I found necessary to be exactly repeated every thirty-six hours, for if I waited forty hours, his evacuations would pass through the cut, sometimes feces and urine commingled. The after treatment was more protracted than in any previous case. He returned home in about forty days, but with occasionally some moisture of the parts. He finally recovered, and his health has been perfectly restored.

CASE VII. Slave Ambrose, aged five years, was operated on June 1st, 1840. Drs. White, Michie, and Jones assisted in this operation. We removed a calculus of more than ordinary size. He passed his urine naturally on the tenth day, and on the thirtieth returned home cured. Nothing unusual occurred in the case.

CASE VIII. James Wells, of Virginia, aged four years, was operated on in September, 1844. In this operation I was assisted by Drs. White, Jones, and Couch. He passed his urine naturally on the eighth day, was walking about on the fifteenth, and returned home cured on the thirtieth day.

CASE IX. Mr. H. Hardy, of North Carolina, aged eighteen years, was operated on November 21st, 1844. The necessary preparatory treatment was administered by Drs. Johnson and Cross, of the neighbourhood, when I visited him, attended by my friend Dr. J. F. Peebles, who assisted, in conjunction with the two gentlemen above named, in the operation. We removed an uncommonly large calculus. Although the operation was performed with our usual caution, and in the same manner as heretofore, yet the pudic artery was unfortunately wounded. It is perhaps worthy of remark that this accident did not at once manifest itself. It was only after the patient had been cleansed and replaced in bed that hemorrhage came on. After, in quick succession, he had discharged several coagula of blood of the full size and shape of the bladder, which he voided, impelled by a desire to urinate, symptoms of sinking to such an alarming extent came on that it became necessary to replace him once more on the table, with the view of arresting the hemorrhage. Whilst preparing a tent for this purpose, Dr. C. Cross inserted his finger into the wound, and feeling the jet of blood impinging against it, suddenly made pressure on the spot. The manœuvre was eminently successful. It was soon found that he had the bleeding entirely under control. Other measures were at once abandoned for this simple yet direct procedure. With unflagging zeal, altogether above all praise, Dr. C., despite the discomfort of his position, steadily maintained the pressure on the wounded vessel for five or six hours, when, gradually withdrawing his hand, we found that all bleeding had ceased. A sponge was then introduced on a canula, which was saturated with a solution of creasote, and allowed to remain until suppuration took place.

The weak state of the patient, combined with much cystic irritation, which continued for some time, rendered his condition extremely precarious for

several weeks. Under appropriate local and general treatment, however, he gradually gained and finally was perfectly re-established in health.

CASE X. Mr. J. R. Lunsford, of Virginia, aged twenty-seven years, was operated on January 17th, 1845. Drs. White, Jones, Couch, and Strachan aided in this operation. We removed two calculi, one of more than ordinary size, lying just in front of the prostate gland, the other in the bladder. Finding two, either over the common size, I examined very minutely with the finger and the instruments but found no other. I then proceeded to wash out the bladder with warm water and Castile soap, and replaced him in bed. He rallied at once, and was restored to complete health in an unusually short time. He passed his urine naturally on the tenth day, and returned home on the twenty-fifth day.

CASE XI. Master Rufus Stallings, of North Carolina, aged four years, was operated on May 18th, 1847. I was assisted in this operation by Drs. J. F. Peebles, White, and Thweatt. The calculus was removed, and he commenced passing his urine naturally the next morning. On the third day he passed all his urine per urethra, and returned to the interior of North Carolina on the nineteenth day from the operation, in fine health and condition.

CASE XII. Cornelius, a slave, four years of age, was operated on May 31st, 1848. Drs. Peebles, White, Withers, and Thweatt assisted in this operation. The calculus was removed, and he commenced passing his urine naturally on the fifth day, recovered his health rapidly, and returned home on the twenty-fifth day well.

CASE XIII. Master Louis Blitz, of Virginia, aged seven years, was operated on March 25th, 1849. I was aided in this operation by Drs. White, Michie, Couch, and Hinton. We removed rather a small calculus. The health of this patient was extremely low, and his recovery gradual until the tenth day, when he commenced passing his urine naturally; from that time he recovered rapidly, and returned home on the thirtieth day from the operation in good health.

CASE XIV. William, a slave from Williamsburg, Virginia, aged four years, was operated on April 29th, 1849. In this operation I was assisted by Drs. Peebles, Michie, Withers, Couch, and Durkin. We removed an uncommonly large calculus from the bladder, measuring one and a half inch in length, and large in proportion. The little boy had suffered from birth, and had become so much emaciated and relaxed as to render the operation most difficult. After the first cut of the scalpel, such immense relaxation and prostration of the lining membrane of the rectum took place, that I was compelled to lay the bistoury down frequently to replace the protruded membrane before I could complete the necessary section to get in the groove of the staff. In the progress of the operation, I unavoidably cut into the rectum as I apprehended. Having committed the same error in the sixth case, or operation on R. Maggett, I at first feared much trouble, but suggested to my friend Dr. Peebles the propriety of locking up the bowels, with some preparation of opium, and permit the small opening in the rectum to heal as speedily as possible. To our astonishment and gratification, in a few days the part had healed and become firm, and on the fourth day he passed his urine naturally. Recovery in this case was as speedy as in any I had ever known. On

the twenty-second day from the operation he returned to his home in Williamsburg, full of life and health.

The above mode of treatment I have since ascertained, first suggested, I believe, by M. Chomel, of Paris, is now generally employed in cases of intestinal perforation occurring in typhoid fever. It is certainly applicable to all cases of wounded intestines, and I perceive that Dr. Gerhard also recommends it in pneumothorax.

CASE XV. Mr. A. Wells, of Virginia, aged twenty-eight years, was operated on September 23d, 1849. I was assisted in this operation by Drs. Couch, Peebles, Hinton, and Rives. We removed a calculus weighing five hundred and sixty-three grains. The enormous size of the stone considered, it was with no little surprise and pleasure that we found him passing his urine naturally on the eleventh day. His general health improved rapidly, and the only after treatment pursued was the infusion of buchu through the day and a good and nourishing diet. It may be proper to remark here, that the external incision did not heal as rapidly as we anticipated. The healing process was very gradual, and it was not until the caustic had been several times applied that we could get the part to heal completely.

Recapitulation of the Fifteen Cases.

1st case	died in the course of 12 hours.
2d do.	" " " " 14 days.
3d do.	urinated naturally on the 8th day.
4th do.	" " " 15th day.
5th do.	" " " 5th day.
7th do.	" " " 10th day.
8th do.	" " " 8th day.
10th do.	" " " 10th day.
11th do.	" " " 3d day.
12th do.	" " " 5th day.
13th do.	" " " 10th day.
14th do.	" " " 4th day.
15th do.	" " " 11th day.

In the 6th and 14th cases the rectum was cut. In the 9th case the pudic artery was divided.

Of the 15 cases, 9 were whites, all males; 3 boys, 4 nearly grown, and 2 over 21 years of age. The number of blacks 6, 4 boys and 2 men.

ART. XV.—*Displacement of the Heart from Atrophy of the Left Lung.* By C. J. CLARK, M. D. of Jacksonville, Alabama.

LAENNEC enumerates as causes of displacement of the heart, a solid, liquid, or æriform effusion into either sac of the pleura, extensive tumours in the lungs, emphysema of this organ, and alludes to a prolapsus of the heart without any visible cause.

Dr. Townsend (*Cyclopædia Pract. Med.*) lays down as causes of displacement, 1st, effusion into the sack of the pleura; 2d, aneurism of the aorta;

3d, tumours; 4th, pulmonary emphysema; 5th, diaphragmatic hernia; 6th, enlargement of the liver; 7th, hypertrophy; but says "in nine cases out of ten where the heart is removed out of its natural position, it will be found to have arisen from empyema or pneumothorax."

Dr. Joy (*Lib. Pract. Med.*) mentions tumours, augmented dimensions of the neighbouring organs, morbid effusions, aneurisms of the aorta, emphysema and ascites; and refers to *one case* by Dr. Abercrombie, in the *Edinburgh Med. Transactions*, in which the heart was displaced by "atrophy of one lung accompanied by a hypertrophic condition of the other."

The following case will make one other case recorded, in which the displacement was caused by an atrophy of the lung.

Gilbert Rakes, a man aged 52, had several years ago, as he said, while residing in the State of Virginia, a severe attack of inflammation of the left lung. Suffered ever since from attacks of cough, dyspnoea, and fever, which usually terminated or moderated each time, in a great degree, after the establishment of copious purulent expectoration. For a long time has scarcely ever been entirely free from cough, some degree of dyspnoea and purulent expectoration; though these symptoms were much aggravated at times by exposure to atmospheric vicissitudes, &c. At these periods, his breathing partook of an asthmatic character.

I had known this man, myself, for four or five years, though I had never examined particularly into the nature of his disease. He looked haggard and prematurely old; had very constant cough and expectoration, and was considered consumptive. Yet he spent a great deal of his time on horseback, riding about the country, and frequently performed journeys of from fifty to two hundred miles without difficulty.

I examined him hastily for the first and only time, on the 12th of May, 1844, three days before his death. He was then sinking from hectic fever and copious offensive purulent expectoration.

The chest was of the natural shape and dimensions, there being neither contraction nor dilatation at any point. Upon percussion, the right side of the chest yielded a healthy resonance; the left a *hollow, drum-like* sound, similar to that in extensive emphysema, but exaggerated. On auscultating the right lung, the normal sounds were heard, but unnaturally loud, while over the whole of the left side of the chest, except a space along the margin of the sternum, into which it subsequently appeared the right lung had protruded, there was a total absence of the vesicular murmur. Over the inferior lobe was heard a bronchial *blowing*, with some gurgling. Over the superior lobe, as you approached the clavicle, a loud bronchial blowing, attended with great gurgling. The heart gave no impulse to the anterior wall of the chest, beat tumultuously, and *sounded as if at a distance*. It beat so rapidly the two sounds were scarcely distinguishable; but there was no *bruit* or other abnormal sound perceptible. Upon percussing the posterior part of the chest, there was decided flatness over this lung. Auscultation discovered no vesicular murmur here; but great gurgling and greater distinctness of the heart's sounds than anteriorly.

Post-mortem Examination.—Ten hours after death, with the assistance of Dr. J. C. Francis, I made an examination of the contents of the thorax. The first thing that attracted attention upon raising the sternum, was the protrusion of the right lung, which was greatly hypertrophied into left side, passing beyond the line at which I had divided the cartilages of the ribs. Pushing the lung back towards the right side, a large cavity or vacuity was discovered in the left, in the place the left lung and heart should have occupied. This

cavity was a total vacuum, so far as solids or liquids were concerned. The diaphragm had risen considerably higher on this side than on the right. At the bottom of this cavity was found the pericardium and the heart, and beneath them the lung, completely atrophied, and shrunk to one-sixth the healthy size, and firmly adherent to the posterior wall of the chest. Commencing at the spine, and passing along the ribs towards the sternum, the adhesion extended about one-third the length of the ribs, being caused by a dense, thick, false membrane (or mass), so strong, I could not possibly tear it away with the utmost strength of my hands, but which I had to dissect away with a knife. This thick fibrous membrane, by which the lung was bound down to the costal pleura, when dissected out, proved to be the walls of a sac which contained a large quantity of offensive purulent matter, such as the patient had expectorated during life. There were also a number of small abscesses throughout the atrophied lung, containing the same kind of pus. In these some of the smaller bronchial tubes terminated abruptly, having ulcerated, and presenting open mouths in the suppurating cavities. Every portion of the lung had lost its cellular structure, the parts between the abscesses being in a state of gray induration, and every portion sinking in water instantly. The pericardium was firmly bound to the atrophied lung, and this had evidently in contracting, *drawn the heart along with it*, almost into contact with the posterior third of the sixth and seventh ribs.

This had evidently been a case of pleuro-pneumonia, terminating in adhesions between the two pleuræ at the back of the lung, and the pleura and pericardium, hepatization, and the deposit of plastic lymph on the surface, and in the substance of the lung, and the formation of abscesses. Subsequently, the contraction of the false tissue around and within the lung had compressed it, while a disintegration was going on in the abscesses, the debris being discharged with the secretions of the suppurating surfaces, constituting the offensive purulent expectoration described—the whole resulting in the atrophy of the organ. As the lung diminished in size, and the contraction of the false tissue went on, the heart, from the adhesions of the pericardium, was drawn after the contracted lung, and thus displaced. It is worthy of remark that, although great displacement had existed, and for a long time, no organic disease of the heart had resulted from it, or any disturbance of its functions, unless the slight habitual dyspnoea might be attributable in part to some irregularity of the circulation. Had this been the case, it would probably in this time have caused some change in the size of the cavities, and the thickness of its walls.

Although there was no contraction of the chest, we might diagnosticate an atrophy of the lung in such a case as this by the *presence* of the *hollow, drum-like* resonance with the total loss of the vesicular murmur, in the *absence* of dilatation of the chest, widening of the intercostal spaces, and other evidences of emphysema. The displacement of the heart would be evident by the absence of the ordinary flatness yielded on percussing the cardiac region—from its giving no impulse to the ribs, and beating to the ear as if at a distance when examined in front, and from the presence of its sounds in the new position to which it had been removed.

JACKSONVILLE, Nov. 27th, 1849.

REVIEW.

ART. XVI.—*A Systematic Treatise, Historical, Etiological, and Practical, on the Principal Diseases of the Interior Valley of North America, as they appear in the Caucasian, African, Indian, and Esquimaux varieties of its Population.* By DANIEL DRAKE, M. D. Cincinnati, 1850: 8vo. pp. 878.

WE hail with pleasure the appearance of this long expected work of Dr. Drake, on the medical topography and diseases of the valley of the Mississippi. Our anticipations in relation to it, founded upon the known abilities, and untiring industry of the author, and the time and labour he is known to have devoted to the collection of the materials required for its successful execution, have always been in the highest degree favourable. These anticipations have not been in the least disappointed, now that the work has appeared. It will, we are convinced, be ranked as the most valuable and important original production, of a strictly professional character, that has yet appeared from the pen of any of our own physicians.

The volume now published comprises, 1st, the topographical, hydrographical, climatic, physiological, and social etiology of the great Interior Valley; and 2dly, that portion of the febrile diseases of the valley included under the heads of intermittent fever, simple, inflammatory, and malignant, with the corresponding varieties of remittent fever. The first part, or that devoted to the medical topography and climate of this extensive region, and to the character, modes of living, habitations, occupations, pursuits, habits, and recreations of its population, occupies the first seven hundred and two pages.

An idea may be formed of the extent of region, to the medical history of which the work of Dr. Drake is devoted, from the following extract taken from its initial chapter.

“Of the area of this great intermontane region, it is not easy to speak with much precision. To the south, its latitudes vary from the eighteenth to the thirtieth parallels; in the north, from the fiftieth to the seventieth. In the south, its eastern margin is found near the eighty-first meridian; its western, in the one hundred and fifth; but in the fifty-third degree of latitude, it advances east to the fifty-sixth meridian, and west to the one hundred and sixteenth; finally, in the sixty-eighth parallel, its western margin is found in the one hundred and thirty-sixth degree of longitude.

“If we assume eight millions of square miles as the area of North America, the valley cannot be estimated at less than six millions, or three-fourths of the whole continental surface. Its northern half, however, is rendered nearly uninhabitable by the state of its surface and its climate; and, therefore, the portion which presents objects of immediate interest to the medical etiologist does not exceed three millions of square miles, of which, as yet, not more than one-third has acquired even a sparse population.”

The medical topography of each portion of this region is separately considered; beginning with the coast of the Gulf of Mexico, and the localities in and around the delta of the Mississippi; proceeding thence to the bottoms and bluffs of the river Mississippi above its delta; to the regions west of the gulf and river, thence to the regions east of the gulf and of the Mississippi, south of the Ohio basin; thence to the Ohio basin, the regions on the northern side of that river, and the regions north of the Ohio basin. Then to the eastern

or St. Lawrence basin; the basin of Lake Erie, of Lake Ontario, and, finally, the Hudson and arctic hydrographical basins.

The vast extent of this field of inquiry, which would, at first view, seem to be a great disadvantage, Dr. Drake considers to be, in fact, highly favourable to the development of results; as it enables us to trace a disease, in continuity, from its points of greatest prevalence, to its disappearance under new physical, or moral and physical conditions.

To the medical inquirer, the study of topography, in conjunction with the extent, character, condition, pursuits, habits, clothing, dwellings, means of sustenance, including the ordinary diet and drinks of the population, is chiefly important in reference to its influence upon health, vigour, and longevity, and its especial bearing upon the etiology of disease; consequently, to enable him to arrive at any satisfactory solution of these questions, it is essential that we be made acquainted with the ordinary duration of life, the prevailing diseases, their frequency and character, and the prevailing endemic and epidemic maladies in each location or region described. Unfortunately, however, medical statistics have been but little attended to by the physicians of this country, and the loose general statements, imperfect records, and indirect sources of information from which opinions, in regard to the sanitary and etiological influence of climate and locality, are usually derived, can never be made the basis of any satisfactory conclusions in this respect. While, therefore, we receive with pleasure every contribution to the accurate topographical description of the different regions of our country, we must wait patiently until a sufficiently extended series of accurate medical statistics shall enable us to apply our knowledge of the topographical, hydrographical, climatic, physiological, and social history of our country, to the solution of the important questions connected with the etiology and possible prevention of its diseases.

"In describing," remarks Dr. Drake, "our topography, climate, and states of society, I might have noted the relative prevalence of many diseases; but such a course would have been attended with numerous embarrassments. I selected two, therefore, which, from universal observation, are known to have a most intimate connection, in their origin or prevalence, with soil and climate; and have very generally noted the degree of their occurrence, or their absence, in each locality; thus endeavouring to maintain in the mind of the reader the connection which, in nature, exists between topography and etiology. He must not, however, forget that in the study of many others, a reference to the topographical descriptions will frequently be made."

There can be little doubt of the general accuracy of the statements made by Dr. Drake in reference to the endemical diseases of the different sections of the great valley. His inquiries into these have, evidently, been made with great care and industry, and, in a large number of instances, his information has been derived from personal intercourse with the most experienced and intelligent physicians of the particular locality. The same remarks may be made, also, in regard to the account given in the work before us, of the non-endemical diseases that are most frequently met with throughout the valley. Dr. Drake has collected all the facts bearing upon this important branch of his subject that were within his reach, and has presented them in as accurate a form as they were susceptible of assuming. In the absence, however, of a correct series of medical statistics, with all his industry and research, our author's account of the comparative prevalence and mortality of different diseases, in the several portions of the valley, are deprived of that precision so essential to arriving at correct conclusions in regard to the etiological influence of locality and climate; while, for determining the influence of these upon the duration of life, we are left without any reliable data.

The plan pursued by Dr. Drake in his topographical description of the valley, will be understood from the following sketch of it, given in the introduction to the first part of his treatise.

"As an introduction to the difficult task of topographical description, over so large a surface, I have attempted to prepare, as it were, a geographical background, fitted (to continue the metaphor) to bring out, more distinctly, the characteristics of each locality. Thus, a comprehensive outline of the physical geography and hydrology of the whole region precedes all local description; and in the unsettled portions of the valley, comprehends all that seemed necessary to our purpose. I have also sought to give the progressive topography a geological basis, a hydrographical guidance, and a climatic order, all of which, it will be seen, was in some degree practicable. Beginning with the shores of the Gulf of Mexico, and advancing north, we pass successively over all the geological formations of the valley, from the newest to the oldest. Again, commencing at the gulf, we start on a proper hydrographical base line, and by ascending the Mississippi, are guided in the same direction as before. Again, in starting from the gulf, below the twenty-third degree of north latitude, we get a tropical base line for our climates, and in advancing to the north, reach, progressively, higher latitudes, greater elevations, and further distances from the sea. Finally, while ascending the Mississippi, if we turn from it to the east or west, we constantly attain to a higher level and a dryer surface.

"If we pass out of the valley of that river into the basin of the great lakes, and the St. Lawrence, we find similar, though less striking relations. Thus, in descending to the south, from the summit level beyond Lake Superior, to the western end of Lake Erie, we pass regularly from older to newer geological formations—from a wetter to a dryer surface—from higher to lower levels; and when we turn from the extremity of the latter lake, and advance in the direction of the St. Lawrence, we pass from newer to older geological deposits; from lower to higher latitudes, and from higher to lower elevations, until we reach the tides in that river. Lastly, if we pass over the dividing ridge between the waters of the southern and northern parts of the valley, and descend the rivers which disembogue into the frozen seas of the north, we travel most of the way over primitive rocks, are constantly arriving in a higher latitude, and as constantly sinking to a lower level, until we reach the ocean.

"It has been my aim to keep these various relations in view, and so to proceed with the descriptions as to have no locality insulated, but each to follow some other in a natural sequence, and thus to arrange the whole into one topographical system."

The plan thus sketched out, extensive as it is, has been carried out in a manner highly creditable to our author, and in one calculated to render the labour of those who shall hereafter pursue the investigations of the nature and etiology of the diseases of the interior valley of North America comparatively light.

It is not our intention to attempt a review of the first portion of the treatise before us. Such an attempt would be presumptuous in any one who has not prepared himself for the task by the same laborious and protracted course of exploration and research which has been pursued by the author in the collection of his materials. The work is professedly an exposition of facts and careful observations, to test the accuracy of which is the work of time and continuous observation. While few, if any one, besides the author, could be found competent to its production, there is scarcely any one who is now prepared to examine critically the truthfulness of its descriptions throughout, or the correctness of all its general conclusions from the facts adduced.

Extensive as his explorations have been, large regions of country remain unvisited; and Dr. Drake admits that

"Many conclusions at which he has arrived, might possibly have been different, had the facts, which these regions could have furnished, been obtained by

him. Yet, as his personal examinations were carried through eighteen degrees of latitude, and nearly as many of longitude, he trusts that facts which may, in some degree, stand as representatives of the whole, *have* been collected; and, therefore, that no general conclusion will be found radically wrong."

The second part, or that devoted to climatic etiology, will be found replete with valuable observations, equally interesting to the general as to the medical reader. It will not admit, however, of any very satisfactory analysis.

In Section V., a table is presented showing the average of the mean temperatures, at thirty-two localities, of the six pairs of months, beginning with January and July, and travelling through the calendar year. To this table are appended the following remarks:—

"The results presented in the footing of this table are not destitute of interest. They show that, of the six pairs of months, but one varies from the mean annual temperature to the extent of a degree; they show, also, that the mean temperature of February and August approaches nearest to the mean temperature of the year; and that the average of June and December departs widest from it. The former are the last winter and last summer months; the latter are the first summer and first winter months. We likewise see that four of the pairs rise above the mean annual heat, two fall below it. Those which present an excess are the four pairs which succeed to the solstices; those which offer a deficiency are the pairs which precede, and the pairs which include the solstices; the latter showing the greater deficiency of the two, 1° 18'. It would be interesting to know whether this is the consequence of inaccurate observations, or in accordance with a law of our climate.

"As the mean heat of each pair of months presents so close an approximation to that of the year, it follows, that the mean temperature of the latter may be ascertained, by observing that of the former; but we must bear in mind, that this close approach is made, by the observations of the whole table, which embraces stations in various parts of the valley from south to north. In particular portions of it, the coincidence may not be so near"—

"It might be supposed that, when we know the mean annual temperature of any particular place, as Nashville, for example, and observe the temperature of a month, as of February, we might predict the heat of August. If, for instance, February were very cold, that August would be very hot; or if May were unusually hot, November would be correspondingly cool; or, taking seasons, it might be expected that a rigorous winter would be followed by an ardent summer; a warm spring by a cold autumn, *et vice versâ*. But there are two sources of uncertainty in these predictions. *First*, it may be that the winter and spring should have been compared with the summer and autumn which preceded, instead of following them; and *second*, we know that the mean heat of different years, at the same place, is not the same, but varies several degrees. It might be, then, that a cold February or April would not be followed by a hot August or October; for the whole year might be one of low temperature. Nevertheless, if any month depart widely from its proper mean heat, there is, *primâ facie*, much reason to expect that its counterpart will vary as much in the opposite direction. This mode of prognosticating may, perhaps, be turned to some account, in deciding beforehand on the probable duration of the prevalence of bilious fever in autumn. Thus, if April and May should be unusually intense, it might be expected that October and November would be so cool as to give an early termination to autumnal fever; and if June should be violent in its heat throughout, a cold December and an early setting in of winter might be expected."

Part the third comprises an excellent sketch of the population of the valley, its physiological characteristics, modes of living, including diet, drinks, clothing, lodging, habitations, occupations, pursuits, exercise, and recreations.

Were we to indulge our inclinations, to dwell on every point of interest contained in the sections devoted to these several particulars, the very judicious remarks of our author would lead us into a somewhat extended notice,

interspersed with copious extracts. But we prefer a general expression of approval, in the full belief that no American physician will consider his library complete without a copy of the work of Dr. Drake, and that all who desire instruction on topics interesting alike to all will be desirous of devoting an early opportunity to its attentive perusal.

The author concludes the first book as follows:—

“Our general etiology is now brought to a close. If the reader has found its perusal a work of labour, he will be prepared to estimate the amount which has been required to collect, arrange, condense, and give unity to so many diversified facts, connected with a country of such vast extent, and races of people so various. In doing this, I have introduced nothing which I did not consider necessary to a full understanding of the diseases, which are to come under our consideration; for all peculiarities of constitution, both corporeal and mental, exert a modifying influence on disease. In this country, these peculiarities are not yet largely developed, but we may study their causes, and, as far as possible, infer their effects, which our distant successors will see in their full development. A synthesis of varieties and races is going on; and the result, I may here repeat, must be a new national constitution, physical and mental, of which the Anglo-Saxon, itself a compound, will be the basis and the governing element. The physicians of a future day will see, what we cannot now, a prevailing temperament, a stature, form, complexion, and physiognomy, characteristic of an indigenous, but greatly compounded race; with its own physical, intellectual, and moral constitution; its special liabilities and exemptions from disease; its national idiosyncrasies, and the required peculiarities of hygienic regimen and therapeutic treatment. In the course of this development, what hereditary diatheses may disappear, and what new ones take their places; what new maladies may arise, or old ones cease or become greatly modified under the joint influence of mingled blood, of climate, water, occupations, modes of living, customs, and moral, social, and political influences, cannot be specified; but a few predictions may be hazarded.

“1. Autumnal fever will decrease, and typhus and typhoid fevers become more prevalent.

“2. Gout will occur oftener than at present.

“3. The diseases produced by the intemperate use of ardent spirits will diminish.

“4. Consumption and scrofula will increase.

“5. Apoplexy, palsy, and epilepsy will become more frequent.

“6. Diseases of the liver will become less, and those of the mucous membrane of the bowels more prevalent.

“7. Lastly, mental alienation will be more frequent.

“We are now prepared to enter on the study of particular forms of disease. In doing so, I shall not adopt the classification presented in any system of nosology, nor invent a new one; and yet I hope to proceed with such a degree of method as will be found sufficient to avert confusion. The second book will be devoted to febrile diseases, under the five following heads. First, *autumnal fever*; second, *yellow fever*; third, *typhus fevers*; fourth, *eruptive fevers*; fifth, *phlogistic fevers*, or the *phlegmasiæ*. The transition from general etiology to that fever, which, in its origin, has a close connection with soil and climate, is natural; and the transition from the *phlegmasiæ* to many other forms of disease will be found equally natural; and hence I have placed them last, although in a system of elementary pathology, or nosology, they should stand first.”

The present volume comprises only so much of the second book as treats of autumnal fever, intermittent and remittent fever, with their varieties.

The autumnal fever prevails from the extreme southern limits of the valley. Below the 33° of latitude, its eastern limit is the Atlantic Ocean, above that parallel its barrier on the east is the Appalachian Mountains, into the very gorges of which, however, it ascends by the valleys which penetrate their flanks. Its boundaries to the southwest are the Cordilleras of Mexico and the southern Rocky Mountains; while, in higher latitudes, it ceases on the

great plains of our western desert long before we reach those mountains. It is almost unknown at the distance of three hundred miles from the western boundary of the States of Missouri and Iowa, and above the latitude of 37° N. To the north it does not prevail as an epidemic beyond the forty-fourth parallel, and ceases to occur even sporadically about the forty-seventh.

In proceeding to consider the conditions which impose geographical limits, and give unequal prevalence to autumnal fever, under the heads of soils, living vegetation, and surface waters, Dr. Drake remarks that it is a safe generalization to affirm that, all other circumstances being equal, autumnal fever prevails most where the amount of organic matter is greatest, and least where it is least. He considers that a diligent study of the topographical description given in the first part of the first book of his treatise will sustain this conclusion, and demonstrate that decaying organic matter is one of the conditions necessary to the production of autumnal fever, either by supplying the material for the generation of a poisonous gas, or by forming a nidus or hot-bed for animalcules or vegetable germs. Surface water is another condition required for the production of the disease. By impregnating the air with vapour and giving a high dew point—by promoting a luxuriant vegetation, and aiding in its decomposition—by promoting those chemical actions in certain soils supposed by some writers to generate exhalations which produce the fever, it is essential to the production of both animalcules and microscopic plants; and by means of evaporation and condensation it causes electrical changes. Thus, water is a necessary element in all the hypotheses which have been framed to account for autumnal fever. An elevated temperature is another of the conditions necessary for the production of this fever. The disease prevails perpetually and virulently within the tropics, but ceases long before we reach the polar circle. The modes in which heat may operate as an etiological agent are, according to Dr. D., by predisposing to the disease in consequence of its action directly upon the surface, and indirectly upon the internal, especially the abdominal, organs. The cool nights of early autumn, acting upon the same over-stimulated organs, may still further concur in producing an attack of the fever. Heat also promotes evaporation, and gives to the atmosphere a high dew point; it favours the decomposition of organic matters; it facilitates the multiplication of minute visible and cryptogamic plants, and may be presumed, therefore, to multiply the microscopic organizations, both animal and vegetable. By evaporating the superfluous water of ponds, swamps, marshes, and sluggish streams, it brings the organic matter which they contain or cover in a condition more favourable to rapid decay. It dries the surface of the ground after the rains of spring and summer, and may, as has been asserted, cause it, in the act of dessication, to send forth deleterious exhalations, different from those generated in deposits of decomposing organic matter. Finally, it disturbs the equilibrium of the electricity of the atmosphere.

“Thus solar heat plays an indispensable part in every hypothesis which has been proposed to explain the origin of autumnal fever; answering equally well for the advocates of combined heat and moisture—miasmatic exhalations—microscopic beings, and atmospheric electricity.”

“We have now,” remarks Dr. D., “reviewed all the obvious conditions which seem to concur in the production of our autumnal fever, and endeavoured to assign the *modus operandi* and influence of each. We have seen the necessity of their concurrence from the fact that the absence of any one puts an end to the prevalence of the fever. These conditions are dead organic matter, resting on or blended with the mineral elements of the soil; water not in any, but in a certain quantity, and temperature, above the sixtieth degree, continuing for at least two months.”

Dr. Drake next passes in review the leading hypotheses that have been advanced to explain the efficient cause of autumnal fever. The meteoric hypothesis is first considered, and a number of facts are adduced, which appear to him conclusive in their bearing against its validity, excepting so far as certain atmospheric conditions may act as exciting causes. He believes that we are, consequently, thrown upon the alternative, a deleterious agent, diffused in the atmosphere—the positive existence of which seems, he thinks, to be established.

“Now this agent may be either one of two kinds—inorganic or organic—and both have a *primâ facie* advantage over the meteoric hypothesis in demanding the concurrence of all the conditions—heat, water, and dead vegetable and animal forms—which have been shown to be always present wherever autumnal fever prevails; while the last is left out of account by the meteoric hypothesis.”

We cannot see with Dr. Drake how the rejection of the meteoric hypothesis necessarily involves the adoption, as the etiological agent in the production of autumnal fever, of a poisonous matter diffused throughout the atmosphere. That this fever is of malarious origin appears to us proved by all the facts connected with its rise and prevalence; but may not this morbid condition of the atmosphere be produced by other changes in its constitution than the addition to it of some unknown deleterious agent? That the presence or character of this supposed morbid change in the condition of the atmosphere has not been demonstrated, we admit; but, then, let it be recollected that the same is true of the presence of a morbid poison. Although Dr. Drake thinks that the facts which have been adduced seem to establish “the *positive existence*” of this poison, yet in examining the miasmatic and vegito-animalcular hypotheses in explanation of the etiology of autumnal fever, he has himself admitted that while the conditions under which that disease appears are sufficiently clear to observation, “the existence of a *special gaseous agent* resulting from them remains to be proved.” Although he thinks that the etiological history of autumnal fever can be more successfully explained by the vegito-animalcular hypothesis, yet he confesses that in the present state of our knowledge, it also must stand as a *mere hypothesis*, and will not “be entitled to the confidence of the profession until many additional facts are brought to its support.” And, in general conclusion, while he asserts his full belief in the existence of a *specific agent* as the definite, efficient cause of autumnal fever, Dr. Drake admits our ignorance of any such cause, and therefore speaks of it as a morbid agent, “known only by its effects upon the living body.” In a subsequent section, he remarks, in regard to the mode of action of this agent,

“Relying on its effects to guide us in an estimate of its character, we may say that the efficient cause of this (autumnal fever) is a peculiar poison, of a sedative and irritating quality, somewhat like the narcotico-irritating gases, or certain solid and fluid bodies, which in large doses, destroy life suddenly, by reducing power, and in smaller portions weaken while they pervert the functions.”

This poison Dr. Drake supposes to enter the blood through the lungs. His reasons for this supposition are as follows:—

“*First.* We have seen that there is no evidence that the morbid impression of this cause is made on the skin or mucous membranes with which it is in contact, and yet its action on the system is a reality; hence we may conclude that it penetrates through some surface to the blood. *Second.* As various gases, vapours, and odours penetrate the thin parieties of the vessels of the pulmonary membrane, we may conclude, from *analogy*, that the efficient cause of this fever may do the same. *Third.* Dr. Stevens has shown that, in the endemic

fevers of the West Indies, the blood suffers deterioration before the phenomena of fever have manifested themselves in the functions of the solids. *Fourth.* The universality of functional lesion, and, in most cases, its equality among the different organs; in other words, the involvement of the constitution, would seem to indicate that the remote cause has acted throughout the whole organism at the same time. *Fifth.* A prominent and most dangerous condition in autumnal fever is the impaired state of the calorific function, found in its highest degree in algid intermittents. As the blood evidently plays an important part in this function, may we not conclude that in these remarkable cases it has undergone a change in its composition or constitution which unfits it for the development of caloric? Whatever may be the agency of the nervous system in this function, it is undeniable, that the blood is immediately and deeply concerned, and highly probable, that its agency is according to chemical principles. Should it, then, be altered in its constituents or their mode of union, an alteration in its calorific agency would be inevitable. It must not be forgotten, however, that in the stage of febrile excitement there is increased heat. Nevertheless, there are cases in which, during that stage, the extremities continue cold. *Sixth.* An argument in favour of this hypothesis may, perhaps, be found in the well-known fact that a suppression of perspiration, by lodging in the open air, tends to excite the disease, and that a copious perspiration, effected by art, in the forming stages, often arrests it. While the function of perspiration continues active, the poison absorbed by the lungs may pass off through the skin; but, being arrested in that exit, may, by its accumulation, prove mischievous, and when it has already begun to do harm, a copious sweat may relieve the system of such an amount that the fever may be averted. *Seventh.* Nearly connected with these views, and tending to the same point, is the fact, that as long as the nights continue warm, the disease does not become epidemic; but as soon as they become so cool as to check the functions of the skin, by diminishing its capillary circulation, and surrounding it with a damp atmosphere, from the liberation, by the reduction of temperature, of a portion of vapour, which was insensible at a higher degree of atmospheric heat, the fever assumes an epidemic character."

The poison thus introduced, Dr. Drake supposes to become, on the one hand, mingled with the blood, which it deteriorates by disturbing the equilibrium of its affinities, and changing its isometric character; and, on the other, by acting directly upon the entire internal surface of the arteries, veins, and heart, producing throughout the organism reduction of vital energy, obtuseness of sensibility, suspended or perverted secretion, and diminished calorification. If we combine these effects with those supposed to be produced by the altered state of the blood on the nervous system, and all the organs of secretion, and with the whole, those which must necessarily and immediately result to that fluid, from the reactive influence of the diseased solids, we have the pathological state which, according to our author, constitutes the first effect of the remote cause, and the first stage of the fever.

After tracing the impression of these morbid impressions up to the full development of the cold stage, followed by the morbid reaction which constitutes the hot stage, or that of excessive excitement, Dr. Drake remarks:—

"In whatever way it is brought about, when death does not happen in the stage of depression, high excitement ensues; and other phenomena, indicating new pathological conditions, offer themselves to our notice.

"1. The blunted sensibilities of the patient become morbidly acute—pain occurs in parts not previously affected, or becomes sharp where before it was dull.

"2. The heart, in most cases, acts with unwonted force, and the blood is thrown toward the periphery of the body, but circulates with a rapidity which brings it speedily back upon the viscera.

"3. The calorific function is not only restored, but becomes excessive, and the intolerance of heat is augmented.

"4. The liver acts with uncommon energy, and the secretion and excretion of bile are correspondingly great; at the same time the bilious hue may become deeper than before, indicating either return of bile into the blood from the liver, or extraordinary development of its elements in that fluid.

"5. After the lapse of a few hours in the intermittent, and of a longer portion of a day in the remittent form, this excitement abates, and an intermission or remission is declared, by the tranquillity of the patient, the abatement of the force and frequency of his pulse, and the occurrence of more or less perspiration.

"6. It may happen, however, that when the stage of excitement comes on, some organ or organs will remain in a state of hyperæmia, and pass into inflammation. These are, generally, the viscera of the abdomen, chiefly the spleen, liver, and gastro-enteric mucous membrane.

"a. Splenitis is so common an accident of our autumnal fever, especially our inflammatory intermittents, as to suggest that we can nowhere look for the true anatomical character of that fever more successfully than in the spleen. Why it should be so great a sufferer cannot, perhaps, be told, except that it becomes greatly engorged in the forming stage of the fever.

"b. Next to the spleen, or equally with it, the liver is liable to fall into inflammation upon the access of the hot stage; but this is more especially the case in the remittent type.

"c. The mucous membrane of the stomach and duodenum, with that of the common gall duct, are liable to pass into the same condition.

"Thus all the subdiaphragmatic viscera, except the pancreas, are subject to inflammation in this fever. Sometimes, however, from idiosyncrasy, or the co-operative action of certain causes, inflammation of the brain, or its envelopes, may happen; and when the fever makes its attack, late in autumn, the combined action of vicissitudes of temperature and of the specific cause, developed at an earlier period, may determine the inflammation upon the lungs or pleura. Wherever the inflammation may be seated, it complicates the case, and creates a new kind of danger. Although it may abate with the subsidence of the hot stage, it does not cease. The affected organ shows signs of suffering during the apyrexia, which it renders imperfect. The succeeding exacerbation may be prolonged by it, and an intermittent may thus be converted into a remittent; while the latter, not unfrequently, as already said, passes nearly into a continued type, from the same pathological cause. But the most dreaded combination of this kind, which we meet with in the Valley, is that in which an inflammation of an organ is associated with such a depression of the general forces of the system, that but a feeble reaction occurs. That this is a reality, both the symptoms and post-mortem appearances have shown. Such inflammations are never very acute. The organ is greatly engorged, but the actions which constitute inflammation are feeble; and, after death, appearances which indicate congestion or passive hyperæmia, are more conspicuous than the vestiges of true inflammation. Between these cases and mere congestion of the organ there is often but a shade of anatomical difference."

The theory presented by Dr. Drake of the development and leading results of autumnal fever is ingenious and plausible; unfortunately, however, it is based upon a mere assumption—namely, that the first disturbing cause, by the impression of which is produced the entire chain of pathological actions and phenomena which constitute the fever, is a material poison introduced through the pulmonary circulation into the blood. Such may possibly be the fact, but at present we have not the slightest evidence to prove that it is so. The exposition given by Dr. Drake, of the development and results of autumnal fever, taken simply as a history of the lesions and phenomena by which these are attended, is interesting and instructive.

It is not our intention to follow the author through his history of the disease, and its several varieties, and his directions for its treatment. The history of the simple form of the disease he omits; its symptoms, progress, and sequelæ being, throughout the Valley, substantially the same, and quite

identical with those exhibited in all times and in every country. The curative measures directed by Dr. D. are based upon sound therapeutical principles. He is no advocate for any exclusive practice or special formulæ or heroic doses of medicines, but guided, in each case, by the pathological conditions indicated by the symptoms, applies the means which common experience has shown to be the best adapted for their removal. His remarks on the administration of quinia are particularly sound. In relation to this remedy, the following extract will probably be interesting to our readers :—

“Two opposite conditions of the system contraindicate the use of quinia: 1st. A high degree of phlogistic diathesis, with arterial fulness; 2d. Great depression of the vital forces.

“The effects which have been ascribed to it characterize it as a medicine which produces, in the innervation, a peculiar change, and constitute it an alterant of a particular kind. Now this effect, as experience has shown, stands specifically opposed to the effect produced by the cause of autumnal fever; and on this accidental opposition depends its efficacy, in all the varieties (though not in all the stages and complications) of that fever. In reference to *them*, it may be said to be antiperiodical, and antidotal. It is not, however, infallible; for its curative relations to autumnal fever are like those of mercury to syphilis, or of iodine to goitre and external scrofula. If they succeed beyond all other known remedies in those diseases, so does the sulphate of quinine in the diseases of which we are now treating: if they occasionally require preparatory and adjuvant treatment, so does it; if they sometimes fail, so does the remedy we are considering.

“I have said that I should take the sulphate of quinine as the representative of the cinchona bark; but it seems proper here to remark that their effects are not precisely the same, though doubtless both act on the same principle in arresting the paroxysms of the fever. The bark is destitute of a diaphoretic property, and acts as an astringent and tonic. A greater reduction of the powers of the system is, therefore, necessary for the successful administration of that medicine than for the sulphate prepared from it; while, on the other hand, the bark is best adapted to cases in which the vital energies are seriously impaired. If to these variations we add that, when the stomach is irritable, the sulphate may be retained, but the bark thrown up, we have before us all the data necessary to a practical estimate of the relative value of the two medicines in the present disease.”

In the inflammatory forms of intermittent fever, Dr. D. considers it improper to administer the quinia until the febrile excitement has been reduced by venesection and other antiphlogistic remedies; which preparatory treatment is still more important, in his estimation, when the case is complicated with inflammation of either of the internal organs.

The chapter on the general history, symptomatology, pathology, and treatment of malignant intermittent fever, will be read with interest and profit. Dr. Drake considers this variety of the disease to be little else than the cold stage of an ordinary intermittent, deepened and prolonged.

“The innervation is scathed, the circulation is enfeebled; the blood, largely retained from the more external parts, circulates with difficulty through the internal or visceral system, which is rendered plethoric, and the great organs, as the stomach, spleen, liver, lungs, heart, and brain, are, respectively liable to pernicious engorgements or obstructions, greatly increasing the danger. A failure in the function of respiration, in the co-operative action of the brain, and in the projectile power of the heart, combine to diminish the aeration of the blood; which, deteriorated in its constitution, contributes still further to sink the powers of life. This condition of the respiratory function diminishes the heat of the body, which is moreover reduced by the failure of the calorific function of the skin, from the combined lesions of the nervous and circulatory systems, while the ready transudation, which the relaxed integument permits, of the serous portion of the blood, and the copious exhalation which takes place,

accelerate the cooling. Thus the patient dies under the combined influence of depression of the vital forces, and that consequential accidental or engorgement of some organ which has procured for this fever the epithet congestive. Or, should a partial reaction occur—should he survive two or three paroxysms to expire in a fourth or fifth, as occasionally happens, a low inflammation may be superadded to passive hyperæmia, in the organs most capable of reaction, while others remain torpid and, perhaps, engorged.”

In the simple and inflammatory varieties of remittent fever, Dr. D's practice is, after blood-letting, at the onset of the disease, followed, in cases attended by the signs of gastric and biliary disorder, by a mercurial cathartic, to commence immediately with the liberal use of the quinia—ten grains of the sulphate, with one or two of opium, and, if none has been already given, ten grains of calomel.

“The results which may be expected are sleep and perspiration, with a full, slow, and soft pulse. In the latter part of the following night, the dose of quinine must be repeated, with or without the other medicines, and again repeated about noon the next day. It does not follow that the patient will not at that time have some degree of thirst, pain in the head or back, and increase of pulse; but his warm perspiration will continue. In this exacerbation an injection may be administered, if he had not been previously purged, or he may be bled again. At bedtime a fourth dose of the quinine, with an equal quantity of Dover's powder, should be taken; and another portion of quinine should be exhibited early the next morning. If he had not been freely purged at the beginning, he may now take a stimulating cathartic; but, if possible, should use the pan, and not leave his bed during the operation. In the early part of the following night he must repeat the quinine and Dover's powder, after which a repetition will scarcely be required. He ought, however, to keep in bed for two or three days longer; a gentle diaphoresis should be kept up, and the healthy action of the liver restored, by small doses of the blue pill and quinine, with a gentle opiate at night.”

The chapter on malignant remittent fever demands a careful perusal—it is replete with valuable practical remarks.

The tenth chapter is devoted to the pathological anatomy and consequences of autumnal fever.

From the first section, we quote the following remarks in reference to the mortality of the disease:—

“A simple intermittent fever, even when left to take its course, rarely, perhaps never, proves directly fatal; but it may derange the structure of some organ, or generate a kind of cachexia or spanæmia, from which, as pathological causes, other and, at last, fatal consequences may follow.”

“Inflammatory intermittents demand the interposition of art to bring them to a favourable termination. Left to themselves, it is true, they will not in general destroy life immediately; but the persisting inflammation of some vital organ may, at last, give a fatal termination. Under a well-known treatment, however, such cases may generally be cured.

“It is otherwise with inflammatory remittents, which, in their advanced stages, often take on a typhus character and prove fatal. Of the proportion who die, it is impossible to speak. I have proposed to our brethren in various places to send me returns of the annual relative mortality from the different diseases occurring in their practice; but the amount of material thus obtained is, as yet, too small to justify its presentation. I do not believe that simple and inflammatory remittents are more fatal in the south than in higher latitudes; but the mortality from them is greater, because they occur more frequently.

“Malignant intermittent fever is always mortal when not arrested by art; and many die from it every autumn, its true character not being perceived in time, or the patient residing beyond the range of enlightened medical practice. Where this variety prevails, therefore, it constitutes, in autumn, the chief outlet

of human life; notwithstanding a successful mode of treatment has been discovered.

"Malignant remittents are not so common as intermittents, but more difficult of cure, and, therefore, much oftener fatal.

"In traversing the interior valley, from north to south, we find that the number of deaths from autumnal fever, as compared with the number from all other diseases, constantly increases. In the higher latitudes, the prevalence of this fever is less, the variety of diseases greater, and the deaths distributed more equally through the year. In the south, the chief mortality is from July to November; though in certain winters, large numbers die of pneumonia, engrafted on constitutions enfeebled and deranged by the insalubrious air of the previous autumn; still it may be affirmed that, below the thirty-third parallel, the inhabitants enjoy more uninterrupted health, for eight months of the year, than in any other part of the valley; and hence it was not without reason that the distinguished Professor Caldwell, several years since, attempted to show that, taking the year round, New Orleans was the healthiest city on the continent."

Dr. Drake's remarks on the pathological anatomy of intermittent fever are not without interest. He has, however, added little, if anything, to our previous knowledge in respect to it. His conclusions are based on too slender a series of observations, many of them very loosely reported, to render them of any particular value. Nor is his account of the pathological appearances peculiar to remittent fever more full or satisfactory.

The consequences of autumnal fever Dr. D. treats of under the head of, 1st. The chronic action of the cause by which he is inclined to believe various diseases may be generated, or, at least, diatheses and predispositions to them. 2d. Inflammation, suppuration, and enlargement of the spleen. 3d. Diseases of the liver. 4th. Dropsy. And 5th, periodical neuralgia. The pathology and management of each of which are treated of at some length.

Our first intention was to have given a short general notice of this first volume of the work of Dr. Drake, believing it to be one, the full value of which is not to be fully appreciated excepting after a careful study of the several books, parts, chapters, and sections in which the materials it presents, in relation to the etiology, character, pathology, and treatment of the diseases of the Interior Valley, are distributed. We have been led into a more extended, though still very imperfect and superficial, review of the volume, from the deep interest we felt in its teachings, as we proceeded in our perusal of it. It is truly a most valuable addition to our native medical literature, and we earnestly hope that the author will be spared to complete the work according to the original plan. That he will be encouraged to do this, at an early period, by the favourable reception given to the present volume, we cannot for a moment doubt.

No attempt has been made to criticise the several views advanced by the author: although we cannot assent to the accuracy of all his pathological conclusions, these are of such minor importance compared with the vast mass of valuable material he has, with untiring industry and great skill, collected and arranged for our use, as well as the general soundness of all his practical deductions, that we have felt no inclination to contest with him a few speculative opinions, which, even if unsound, scarcely detract from the value of his facts or the accuracy of his protracted and repeated observations.

We commend the work to the patronage of the physicians of the United States. Although its subjects may be supposed to interest chiefly those of the Great Interior Valley, still it contains much equally interesting and instructive to the great body of the profession throughout every portion of our country.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XVII.—*The Microscopic Anatomy of the Human Body in Health and Disease. Illustrated with numerous drawings in colour.* By ARTHUR HILL HASSALL, M. B., author of a “History of the British Freshwater Algæ,” Fellow of the Linnæan Society, &c. &c. In two volumes, 8vo.: London, 1849.

THE short time which has elapsed since Schwann opened a new era in physiological science, by presenting to the world his theory of the organic cell as the universal type of organization, has been unusually prolific in contributions to Microscopic Anatomy. These are distributed among the various periodicals, works on physiology, etc., in different languages; and the above is the title of the first successful attempt by an English author to embody the whole in a complete treatise devoted to the subject. But the work does not entirely rest upon the labour of others; Mr. Hassall has gone over the whole ground of histology during “three years of more or less constant labour,” as he observes in the preface, and “has but in a few instances written upon a subject without previous investigation.” The work is exceedingly well got up, and apparently at considerable expense; the second volume is an atlas of sixty-nine lithographed plates, with over three hundred figures, most of them coloured, and with but nine exceptions, drawn directly from nature, of which they appear in most cases to be very faithful representations.

In the plan of the work, Mr. H. divides the structure of the human body into fluids and solids. The former are subdivided into the organized and the unorganized. To the organized belong the lymph, blood, &c.; to the unorganized, the saliva, bile, &c. To the consideration of the first he devotes more than one-third of the first volume, and they are treated of in a masterly manner, in the pathological as well as the healthy condition.

In the article upon the blood, the author adds an additional consideration to those usually given in reference to the formation of the inflammatory crust. He says: “The greater the density of the blood, the longer would the globules take to subside in that fluid; and the less its density, the shorter would that period be. Now, inflammatory blood is usually of high density, while with that of feeble vitality, the reverse obtains. Thus, were it not for the fact that in blood in the first state coagulation is slow, and in the second quick, the blood of weak vital power would be that in which, *à priori*, we should expect to see the buffy coat most frequently formed; but the much greater rapidity in the coagulation of the blood more than counterbalances the effect of density.

“The blood, then, may be so dense, that although at the same time it coagulates very slowly, yet no inflammatory crust be formed, the patient from whom the blood is extracted labouring all the while under severe inflammation. An ignorance of this fact has been the source of many great and perhaps fatal errors, on the part of those physicians who have been used to regard the presence of the buffy coat as an undoubted evidence of the existence of inflammation, and its absence as indicating immunity therefrom. It has been remarked that, in the first bleedings of pneumonic patients, the blood often wants the buffy coat; this is attributed to its greater density, and which is found to diminish with each succeeding abstraction of blood; so that, if inflammation be present, the characteristic coat is usually apparent also after the second bleeding.

“The conditions, then, favourable to the formation of the buffy coat, are a mean density of the blood, slow coagulation; excess of fibrin, and increased disposition to adherence on the part of the red corpuscles.

“Other circumstances doubtless exist which in a minor degree affect the for-

mation of the crust: such as the density of the globules, and the qualities of the fibrin itself. Into these it is unnecessary to enter, as they do not vitiate the accuracy of the general statements."

The author gives an account of a very remarkable observation which he made, appearing to prove that the capillary circulation is in a great measure independent of vital influences (so called), and is mainly due to physical agencies. A detached portion of the tongue of a frog, submitted to microscopic examination, exhibited a quite active circulation for some hours. This phenomenon was no doubt the result of endosmosis and exosmosis, which continually take place in the living body, between the circulating fluids and the fluid contents of the structural elements of the tissues.

In treating of inflammation, he says: "The proximate cause of inflammation consists in an abnormal accumulation of the corpuscles of the blood in the minute capillary vessels, and which accumulation we perceive must inevitably impede the function of the part in which the vessels are thus surcharged, alter its structure, and finally tend to a sympathetic disturbance of the entire economy. For this discovery, we are indebted to the microscope. It will thus be seen that some of the ancient hypotheses in reference to the proximate cause of inflammation were not so very far wrong, and that most of them recognize the fact that it is the capillary vessels and blood corpuscles which are mainly concerned in the production of the phenomena of inflammation."

The pathological conditions of the blood are fully treated of, and form an important part of the work. A chapter is also added on "*The importance of a Microscopic Examination of the Blood in Criminal Cases*," which contains many useful hints in medical jurisprudence.

Mucous globules Mr. H. conceives to be "young epithelial scales, as are also the colourless globules of the blood; they both have a like structure and a corresponding function to perform, but they have a different origin; thus the mucous globules are developed externally to the lymphatics and blood-vessels, while the colourless blood-corpuscles are formed within those vessels." And further, he adds, "Pus corpuscles I conceive to be identical with mucous corpuscles, and these again are to be regarded as representing an early stage in the development of epithelial scales."

In answer to the much disputed question as to the distinction between mucus and pus, he says—"Although it is impossible to discriminate between *true* mucus and pus by means of the microscope in a positive manner, we are yet enabled to distinguish with that instrument *false* mucus from pus, because in this mucus the corpuscles exist in their fully developed form of *tessellate epithelium*; now this power of discrimination is not without importance, as will be perceived immediately.

"Many persons on arising in the morning are in the habit of expectorating more or less of a substance bearing much resemblance to pus. This habitual occurrence is not unfrequently a source of much uneasiness, not merely to the person the subject of it, but also to his medical adviser whom he is led to consult upon it.

"Now, in such cases as these it is often in our power to dispel the anxiety of our patient and our own at the same time; for the solid constituents of such sputa are frequently found to consist almost entirely of epithelial cells, in which case we may safely pronounce that they are not purulent; if, on the contrary, the sputa contain only globules, the evidence which this fact would furnish, although apparently, and indeed most probably, unfavourable, would still be but of a doubtful nature.

"Again, the microscope will frequently determine the nature of a suspected fluid, by indicating in it the existence of shreds of cellular tissue, muscular fibrille, and a variety of other organisms which enter into the formation of the human body; and by the presence of one or more of which, not merely the *nature* of the puriform matter may be ascertained, but also the *locality* from which the pus had itself proceeded."

Considerable space is devoted to the consideration of the human milk in its varied conditions of health and disease, to which we refer the reader for much valuable information.

In the part of the work on the solids, the author notices a new position in which he has discovered the ciliated epithelium to exist, viz., in the convolutions of the epididymis.

His investigations also confirm the view of Schwann, that the Purkinjean corpuscle of bone is a complete cell, and the canaliculi prolongations of the cell wall.

In reference to the almost universal opinion of later physiologists, that the nerves of muscles form loops, which either join other neighbouring loops, or else return into themselves, Mr. H. observes: "I have never seen the nerves terminating in muscle in the manner indicated; not, however, that I doubt the fact of their doing so, because such a mode of termination is common to nerves; but would simply infer from this, that the loop-like arrangement is neither very general nor very obvious.

"According, then, to the latest physiologists, nerves, strictly speaking, really have no termination whatever in muscles: an opinion the accuracy of which is more than doubtful.

"I find that the nerves, after branching in a dichotomous manner, have a real termination, and that from time to time certain tubules leave the main trunks, and end in the formation of elongated and ganglioniform organs situated between the fibres of muscle."

In the medullary matter of the cerebrum, cerebellum, and spinal marrow, the author has discovered intermingled with the tubular structure, globular bodies, which are perfectly independent of the oleo-albuminous matter of the interior of the tubules. These bodies are very numerous, invariably present, and vary in size from the diameter of the tubuli to ten times the diameter of the same. Whether they are true cells, he failed to determine.

According to the investigations of Mr. H., the air-cells of the lungs freely communicate, and are lined by ciliated, cylindrical epithelia.

In regard to the biliary ducts terminating in a lobular biliary plexus, the author presumes it to be concluded that no such an arrangement exists, and bases his views upon those of Dr. Hanfield Jones, whose coarse mode of investigating the structure was followed by Mr. H. with, of course, the same result. "If a branch of the hepatic duct be taken up with the forceps, it may, by delicate manipulation, be dissected out from the surrounding parenchymatous tissue. A branch thus prepared, when placed under the microscope, will be seen to be composed of numerous ramified biliary ducts of various sizes: the extremities of the majority of these are even broken off; but several are evidently entire, and these are rounded." We cannot understand how the most delicate manipulation of the scalpel and forceps is able to obtain anything further than some of the smaller trunks of the biliary ducts, and we can conceive of no better mode of obtaining a true idea of the lobular structure, than by injecting the capillary vessels to avoid error, and then examining thin sections with a moderately high power of the microscope.

Much space has been devoted to the consideration of the pathological conditions of the kidney, principally derived from the researches of Toynebee, Johnson, Simon, and Gairdner.

Without examining further into the merits of the work, we recommend it to students and others as being the best epitome of the microscopic anatomy of the human body in the English language.

J. L.

ART. XVIII.—*Surgical Anatomy*, by JOSEPH MACLISE, Surgeon: with coloured plates. Part Second. Philadelphia, Lea & Blanchard, 1850.

In the number of this journal for January last, we noticed the first part of Mr. Maclise's book, and acknowledged in terms of merited commendation the excellence of the work. The style of the author was sometimes rather laboured, and wanting in that transparency which is so particularly desirable in a scientific treatise; but we felt unwilling to call attention to this defect, because

the instructions were so good. The second part is now published, and in it we are happy to observe much less of the fault alluded to, with the same careful description and accurate delineation which pleased us so much in the first.

The preceding fasciculus concluded with an explanation of the surgical anatomy of the forearm; the present is devoted to the consideration of the wrist and hand; to some points of the anatomy of the neck and head, which were not previously noticed; to the thoracic and abdominal cavities, and to the inguino-femoral region. It will thus be perceived that the author has here taken upon himself a very arduous task; one which demands for its successful accomplishment great familiarity with some of the most important and intricate points in the whole domain of surgical anatomy, and one which, if well performed, cannot fail to be productive of lasting benefit to the student. A more detailed enumeration of the contents of the part before us will assist in the determination of its value.

The first three plates, Nos. 17, 18, and 19, exhibit the anatomy of the wrist and hand. In the text associated with them, these parts are very well described, and the items of chief interest in a surgical point of view are adverted to. These are the relative situations of the vessels and nerves to each other, to the muscles and to the bony structure; the free anastomosis of the arteries, and the occasional irregularities in their origin and distribution, together with the inference desirable from these circumstances, with regard to the difficulty of arresting hemorrhage from these vessels, and the mode by which this accident may be controlled, particularly in the event of a wound of the palmar arteries.

Plates 20 and 21 present views of "the relative position of the cranial, nasal, oral and pharyngeal cavities, &c;" and the general and particular conformations of these parts are explained in the commentary. The author takes a comprehensive view of the subject, points out how, from continuity of structure, in some instances, disease and injury at one point affect other parts; and how, from dissimilarity of structure in other instances, the progress of disease is naturally limited. The particular topics of surgical interest relate to the occurrence of fracture of the cranium, and the peculiarities of this accident from the shape and structure of the cranial bones; the points to be avoided in the application of the trephine to the skull; the conformation of the cavities of the nose, mouth, and pharynx, together with hints as to the introduction of the catheter into the Eustachian tube, the nasal duct, and the stomach.

The next five plates, 22 to 26, inclusive, should be studied in connection with the first and second of the preceding number. They form, together with the author's remarks thereon, a very complete survey of the regional anatomy of the thoracic and abdominal cavities; and we feel confident that the excellence of this part of the treatise will be acknowledged by every attentive reader.

The first two sections describe the relative position of the organs of the chest and abdomen. Mr. Maclise calls attention to the fact that the line of demarcation between these two cavities is not precisely determined. "In birds and many reptiles, *e. g.* the costal arches enclose the common thoracico-abdominal region, as if it were a common pulmonary region. In fishes, the costal arches enclose the thoracico-abdominal region just as if it were a common abdominal region." In man, however, the ribs are in relation with the thoracic organs only, and, together with the interposed diaphragm, isolate the thorax as a region from the abdomen. Nevertheless, this membranous septum is constantly changing its position under the influence of the physiological actions which take place in the organs contained in these cavities, and of many diseased conditions to which they are respectively liable. Hence, the thoracic cannot maintain any fixed relative position to the abdominal viscera, neither is the local relation of the different organs of either of these cavities to each other invariable. These facts are of importance to the surgeon and to the physician with reference to the diagnosis of injuries and diseases; and Mr. Maclise devotes several pages to the discussion of this subject, not only in general terms, but with allusions to many of the particular conditions upon which these changes of relation depend.

The twenty-fourth plate and its commentary display "the relations of the principal blood-vessels to the viscera of the thoracico-abdominal cavity," together

with a few suggestions as to the diagnosis and etiology of some of the diseased conditions of the organs therein contained.

In the next plate is presented a view of the principal blood-vessels of the thorax and abdomen, with reference to their relation to the osseous skeleton. In the text, the author points out the analogy which exists between the configuration of the bony framework of the chest and that of the great arterial trunk with its outspringing branches, and contends that the individual blood-vessels, particularly the arteries, possess forms as characteristic of their situation and mode of distribution as do the separate pieces of the skeleton, and may just as readily be assigned "a local habitation and a name." He also demonstrates the general correspondence between the superior and inferior great branches of the aorta; a correspondence which is not only interesting to the philosophical anatomist as showing a certain uniformity of type, but is important to the practical surgeon as reminding him of the possibility of such an arrangement in any individual case, and of the necessity of preparing for it in the event of an operation. Some other departures from the general type of the aorta are alluded to. Such digressions from the hard-worn highway of anatomical investigation as are met with in this chapter, "serve to lighten the dry and weary detail of descriptive anatomy, at the same time that they lead directly to points of practical import;" they are like the grassy by-paths which allure the traveller from the dusty turnpike to the fields and shaded spring—they are always welcome.

The following chapter comes as a very natural sequent to the several sections which precede it, and treats of "the relation of the internal parts to the external surface of the body." The author remarks that "the abnormal conditions of the *surface* become at once apparent to our senses; but those diseased conditions which concern the internal organs require no ordinary exercise of judgment to discover them." The object of this chapter is to show which of the internal organs are most liable to become deviated from their normal relationship with certain points upon the surface of the body, which ordinarily serve to mark their position; how this deviation is occasioned, and how, when an operation is called for, such organs may best be reached in their abnormal situations.

"The surgical dissection of the superficial blood-vessels, &c., of the *inguino-femoral* region," forms the subject of the succeeding section and plate.

The anatomy of hernia is, or was, the bugbear of the young student. We well remember the dread which the mere allusion to it excited in our mind. It presented such a wilderness of names appended to arbitrary divisions, often of one and the same tissue; and there were such seeming confusion and discord in the opinions of distinguished anatomists and surgeons respecting the several parts involved, that we felt impelled to imitate the conduct of all pious pilgrims, whose journey led them through forests, haunted by goblins and demons; we resolutely closed our eyes and our ears, and prayed to be preserved from all knowledge of such "sights and sounds unholy." Evidently the subject has been studied "not wisely, but too well;" as if it were desirable not to render the matter plain and easily comprehended, but to see how much could be made of it. A simplified description of the anatomy of the region concerned, such as is presented by Mr. Maclise, will, therefore, we doubt not, be acceptable to all. He first touches upon the artificial difficulties which have been thrown around the subject of hernia; passes then to a brief statement of the causes of the accident; and reviews its nomenclature, the chief situations at which it occurs, with the reasons for such selections, and then demonstrates the superficial anatomy of the inguino-femoral region. He thus considers the inguinal and femoral regions, "not separately, but as a relationary whole; for as both regions are blended together by structures which are common to both, so do the herniæ which are described as being proper to either region, occur in such close connection, as at times to render it very difficult to distinguish between them." The chapter is written with unusual clearness, and there is an evident desire on the part of the author to simplify the subject, and to make it easily understood; and the drawing of the parts is admirably executed and well illustrates the text. The following extract will serve to exhibit the

aim and spirit of the author. He says, "the practitioner who would arm his judgment with the knowledge of a broad fact or principle, should not allow his serious attention to be diverted by a pursuit after any useless and trifling details; for not only are they unallied to the stern requirements of surgical skill, but they serve to depose it from the rank and roll of the sciences. Whilst operating for the reduction of inguinal hernia by the taxis or the bistoury, who is there that feels anxiety concerning the origin or the distinctiveness of the "spermatic fascia?" Or, knowing it to be present, who concerns himself about the better propriety of naming it "tunica vaginalis communis," "tunique fibreuse du cordon spermatique," "fascia cremasterica," or "tunica aponeurotica?"

The same subject is continued in the next and last chapter of the present number, which is entitled "the surgical dissection of the first, second, third, and fourth layers of the inguinal region, in connection with those of the thigh;" and the text is accompanied by two excellent plates. The clearness of exposition and the avoidance of all prolix and unnecessary detail which characterize the preceding chapter, equally mark this. It is very well adapted both to serve as a guide to the student in dissecting the parts described, and to refresh the mind of the operator, who is about to attempt the relief of a strangulated hernia; and this, we apprehend, is all that can be desired or expected.

In short, the satisfaction which the perusal of the first part of Mr. MacLise's book afforded us, is renewed in this, both with regard to the drawings and the commentary. And we cannot but feel assured, from these specimens, that the ensuing numbers will prove equally valuable in furnishing a safe and practical treatise on the surgical anatomy of the regions which remain to be described.

F. W. S.

ART. XIX.—*Essays on the Puerperal Fever, and other Diseases peculiar to Women, selected from the Writings of British Authors previous to the close of the Eighteenth Century, by request of the Sydenham Society.* Edited by FLEETWOOD CHURCHILL, M.D., M. R. I. A., &c. &c. Philadelphia, Lea & Blanchard, 1850: 8vo. pp. 464.

THE present volume comprises the essays of Denman, Hulme, Leake, Charles White, Kirkland, Butter, Joseph and John Clarke, and Gordon on Puerperal Fever; Dr. John Clarke's "Directions for the Management of Pregnancy and Labour, with a View to Prevent Disease"—his remarks on "Retroversion of the Uterus, Milk Fever, Inflammation and Suppuration of the Breasts;" Fothergill on the "Management proper at the Cessation of the Menses;" Macbride's "Cases of Tumefaction of the Labium after Delivery;" Clarke on "Cauliflower Exerescence of the Os Uteri," and his two cases of Tumour of the Uterus, with Dr. Denman's Account of an Exerescence from the Womb.

To these papers Dr. Churchill has appended notes, embodying whatever information has been laid before the profession since their authors' time. He has also prefixed to the essays on puerperal fever, which occupy the larger portion of the volume, an interesting historical sketch of the principal epidemics of that disease.

The whole forms a very valuable collection of papers by professional writers of eminence, on some of the most important accidents to which the puerperal female is liable; and although on most of these we have more recent treatises and monographs, in which the facts recorded by preceding writers have been confirmed and amplified, and many of their errors in pathology and practice pointed out and corrected, still the essays before us are replete with matters calculated to interest and instruct the physicians of the present day. With the opinions and observations which they present, no one should, at least, be ignorant, who would lay claim to the character of a well informed practitioner.

On puerperal fever, a disease with the true pathology and proper treatment—the etiology and prevention—of which we, unfortunately, as yet know but little, if anything, the tracts in the present volume have been selected so as to

give the experience of the writers in particular epidemics, including purposely those whose descriptions and opinions differ, affording thus an excellent practical illustration of the variations presented in the character of the fever in its prevalence at different periods and in distinct localities.

The introductory discourse of Dr. Churchill does not consist of a bare enumeration of the several epidemics of puerperal fever that have been recorded from the earlier periods of medical history to the present time. The accounts of the several occurrences of the disease being accompanied with an interesting abstract of the observations and opinions of the writers from whom those accounts are derived, whenever these observations and opinions are of sufficient importance to merit especial notice, either from the professional standing of the author, their direct bearing upon the pathology and therapeutics of the disease, or its peculiar character in the particular epidemics upon which they are based.

The discourse of Dr. Churchill concludes with some judicious remarks on the pathology of puerperal fever, which he offers "rather as suggestions to induce his readers to follow up the subject, than as absolute inferences."

His first remark is, that some special connection would appear to exist between the epidemics of puerperal fever and lying-in-hospitals. He does not mean exactly to assert that these epidemics always originate with and are kept up by these hospitals; but refers to the fact that we have no record of any epidemic independent of them in early times.

"No doubt the disease has since then been observed in private practice in London, Edinburgh, Sunderland, Leeds, &c. &c., but its extent in these cases is, after all, comparatively limited, except in very sickly times, and it is often confined chiefly to the practice of a few individuals."

"2. Perhaps the most universal fact connected with puerperal fever is the presence of local disease. In almost all cases of the epidemic, where an opportunity of ascertaining has been allowed, local lesions of some kind or other have been found, and even when this opportunity was denied, but little doubt existed in the mind of the practitioner that such existed. It seems very probable that, in many cases where the local disease seemed but slight, there would *now* be found very serious and important morbid changes; for we know that a patient may die of inflammation of the uterine veins or lymphatics, with very obscure symptoms, and without either enlargement or very obvious tenderness of the uterus, and that these morbid lesions may be overlooked, if the examination be hasty and superficial."

According to Dr. Lee, puerperal fever invariably depends upon some local disease of the uterine organs, attended, in fatal cases, with a disorganization of their different textures. Dr. Churchill formerly entertained a similar view—its correctness he has, however, latterly seen reason to doubt.

"Though," he remarks, "I would wish to express myself cautiously and guardedly, I must honestly avow that, whilst I fully admit the existence of local disease, I do think that epidemic puerperal fever is something more than that, although I may not be able to define what it is."

This supposition is based on several grounds. 1st. The very remarkable variety of opinions as to the nature of the disease—this being hardly reconcilable with the notion of a simple local inflammation. 2dly. The diversity in the prevailing character of different epidemics, and in the plans of treatment recommended for the arrest of the disease; and lastly, if any one will compare a case of simple inflammation of the womb or peritoneum, in childbed, with a case of epidemic puerperal fever, the symptoms and course of the two affections, and the effects of remedies in each, Dr. C. does not think that a doubt will remain upon his mind that, although the latter is a local disease, it is not exclusively so.

After examining the peculiar effects of uterine phlebitis, and showing that it produces a deterioration of the blood, and remarking that the symptoms which Mr. Guthrie describes as characteristic of irritative phlebitis are very like those of puerperal fever, Dr. C. goes on to state that

"Puerperal fever prevails most during the winter or spring months, and in moist and cold weather, or with alternations of cold and warm moist weather."
"It may be of importance, therefore, to consider what epidemic diseases are

concurrent at such seasons with puerperal fever. There are three which appear to be so especially: bowel complaints (or gastro-enteritis), typhus fever, and erysipelas. The evidence in support of this statement is so abundant, that to adduce it would be to quote almost every writer on the subject." "Nay, it would appear from the statements of Dr. Labatt and Dr. Collins, that typhus fever, occurring in a patient in a lying-in-ward, is capable of originating puerperal fever. Now, I believe that there is little doubt at present, that in fever the composition of the blood is changed, and that in typhus fever the deterioration has reached its maximum.

"From the concurrence of puerperal fever and erysipelas as an epidemic, it has been asserted by many, and with great probability, that they are essentially the same disease—certainly they prevail during the same atmospheric condition, exhibit often the same general symptoms, and Mr. Nunnally asserts may reproduce each other. Dr. Hutchinson and others have seen the two diseases in the same patients, and I think there is evidence to show that the infants of women attacked by puerperal fever are very liable to attacks of erysipelas or diffuse inflammation.

"Now, one peculiarity of erysipelas, in which Mr. Nunnally states it resembles puerperal fever, is the disposition to the formation of pus in various parts of the body, and he admits the probable consequent deterioration of the blood."

"So far, then, we find that the same seasons give rise to certain diseases (puerperal fever, continued and typhus fever, and erysipelas), that they prevail at the same time epidemically, and, as an epidemic, take on the same type, and appear capable either of giving rise one to the other or of co-existing. Now, perhaps (to use an arithmetical expression), if we could subtract the local peculiarities of puerperal fever from that which it has in common with the others, we should arrive at the object of our search. Can it be that some change in the composition of the blood is this element?"

After noticing the opinions given by various authors in relation to the condition of the blood in puerperal fever, Dr. C. remarks:—

"I should be very sorry to come to any hasty conclusion on so difficult a subject, but it appears possible, at least, that the general element, which constitutes the difference between epidemic puerperal fever and simple inflammation of the uterus and peritoneum, may be some deterioration of the blood, depending either upon atmospheric malaria from without, or absorption of some noxious matter within the body. Whether further researches may prove this to be true or not, I cannot but agree with Mr. Moore that, 'in puerperal fever, as in typhus, cholera, and other epidemic and contagious diseases, which seem properly to belong to the class neuroses, there is, besides that of inflammatory action, another element, unknown, but which has an essential influence upon the intercurrent phlegmasiæ arising in their course, and which may yield at one point only to appear at another.'"

On the important questions, is puerperal fever contagious? and, can it be conveyed by a third party, in health, from a person labouring under it, to another person in childbed? Dr. C., after adducing the opinions of the leading authorities, and some of the more prominent facts having a bearing directly upon the subject, remarks:—

"The evidence and proofs thus adduced are of extreme importance, and I fear we must conclude, however reluctantly, in favour, not merely of the contagiousness of puerperal fever, but of the possibility of its contagion being carried by an intermediate party. This makes the practice of midwifery doubly distressing during the prevalence of an epidemic, and ought deeply to impress us with the necessity of the utmost care and caution."

D. F. C.

ART. XX.—*Essay on Syphilitic Sarcocoele*. By JOHN HAMILTON, Surgeon to the Richmond Hospital, Dublin, pp. 40, with two colored lithographs. Dublin, 1849.

HOSPITAL physicians owe to the profession an important duty. Possessed of ampler opportunities of investigating disease than their brethren in private practice, and being thus in the way of acquiring superior skill and more extended information, it must reasonably be expected of them that they shall contribute most largely to the progress of medical science. They are our watchmen, and should inform us of the changes which pass over our intellectual heavens; of the gathering darkness, the threatening storm, the approach and the advent of light. Any tidings from such a source should command our attention and our respect.

The essay whose title we have prefixed above, is the first of a contemplated series of papers by Mr. Hamilton, of Dublin, on the subject of syphilis. It is based upon examples of the disease, which have been observed by the author in the wards of the Richmond Hospital and elsewhere.

We think it unfortunate for pathology that the old nomenclature of disease should still be so much retained as it is, and its links so newly riveted. Thus, Mr. Hamilton designates by the term "*sarcocoele*," which conveys no definite meaning, either of the nature of the morbid process of which the testicle has been the subject or of the anatomical condition of the organ, a disease which we know to be chronic inflammation of the testicle: we would therefore prefer that it should be named accordingly, or that it should be designated by some appropriate synonyme, such as "*chronic orchitis*."

The connection between chronic orchitis and syphilis is made apparent by the prior occurrence, in the same individual, of a primary change and subsequent secondary and tertiary symptoms of the constitutional taint; and, to a certain degree, also, by the amenability of this local disease to the same treatment which cures the other manifestations of syphilitic infection.

Mr. Hamilton makes two forms of chronic syphilitic orchitis, the *simple* and the *tubercular*. "*The simple syphilitic sarcocoele* is met with in persons of healthy constitutions, and when accompanied, as it usually is, by other secondary symptoms, they are regular, well marked, and uncomplicated. As attendants on this form, I have seen the mottled, papular, pustular and scaly eruptions, and those dusky red spots, a little raised, and often a little scurfy, which were called by the older writers syphilitic blotches, iritis; the more healthy (if such a term is allowed) forms of inflammation of the bones and periosteum, and of ulcers in the throat"—p. 5. "*The testicle will be found enlarged to the size of a lemon or of a turkey-egg, of an ovoid or pyriform shape, sometimes flattened at the sides; either uniform on the surface or with the epididymis distinguishable as an irregular ridge along the back; hard, particularly in the situation of the epididymis; heavy, with the integuments of the scrotum of a dusky red; generally neither tender nor painful, excepting that the hanging weight causes a feeling of uneasiness in the loins and inside of the thighs.*" He has never observed the evening and nocturnal exacerbation of pain mentioned by most writers, as serving to assist in the diagnosis of the syphilitic from the ordinary form of chronic orchitis. He has found the disease to be limited generally to one testicle, and has never seen suppuration to occur. In common with other writers on the same subject, he calls attention to the frequent complication of *hydrocele* with this disease.

"*The tubercular syphilitic sarcocoele*," he says, "*is much more common, and differs materially, both in local and constitutional symptoms, from the simple form. The testicle is enlarged from two to four times the natural size; but the increase of size is generally not remarkable; it is of very irregular shape, so that the ordinary form of the organ is often entirely lost, presenting, instead an uneven, hard, knotty mass, in which it is impossible to distinguish the body from the epididymis. At other times the irregularity is seen to arise from the enlarged and indurated epididymis, which gets of a great size, as compared to the body of the testicle, this remaining but little altered, and readily distin-*

guishable from it." The enlargement of the epididymis affects, usually, the upper globus; there is seldom persistent pain or tenderness of the organ, and the progress of the disease is exceedingly slow; both testicles are, according to Mr. Hamilton, usually affected, although not equally.

In the enumeration of the general symptoms which accompany this form of the local disease, the author is not, it seems to us, sufficiently explicit; he enumerates the concurrent diseases of the tissues, which depend upon the syphilitic contamination; *e. g.*, the soft cranial nodes, the caries of the bones, the corroding ulcer of the throat, the "serpiginous, pustulo-crustaceous eruption," &c.; but he makes no mention of the tubercular diathesis nor of any other local tubercular disease. Now, according to the high authority of Louis, tubercles are not found in any organ, after the age of eighteen years, without being also present in the lungs (in the last edition of his book on phthisis, only three examples to the contrary are recorded); yet Mr. Hamilton makes no mention of tubercular disease of the lungs being present in the cases of tubercular syphilitic orchitis which he adduces. Mr. Curling, on the other hand, who must be regarded as one of the highest authorities in this matter, lays it down as of the greatest importance, if not an essential element in the diagnosis of this form of orchitis, that there shall be some manifestation of the tubercular constitution in other organs of the body. In view of these considerations, therefore, while we admit fully the existence of the tuberculo-syphilitic orchitis, we must contend that Mr. Hamilton's cases are not convincing; but that, if, as we have a right to suppose, the reports embody all the evidence bearing upon the question at issue, they are open to grave doubts as to the accuracy of his diagnosis. For, with but a single exception, they offer no strong cause for suspecting any tubercular complication, and in this case the patient had "extensive antero-posterior curvature of the spine;" but if syphilis is the cause of caries of other bones, why may it not have occasioned, in this instance, the destruction of the bodies of the vertebræ?

The author's account of the anatomical condition of the testicle seems to us imperfect, and affords us another ground for questioning the correctness of his opinion in many of those cases which he calls tubercular, and which recovered so perfectly and so speedily. In the simple form of the disease, he says there is "a deposition of firm lymph of a pale yellowish colour into the interstitial cellular tissue external to the tubuli testis, as well, probably, as into the tubuli themselves;" and again—"I think this *uniform* deposition of firm, yellowish lymph is the pathological condition in those cases which I have named simple syphilitic sarcocoele"—pp. 21, 22. In the other variety, he says—"There is one or more tubercles in the epididymis or body of the testicle; they are of a yellowish colour, of a consistence rather less firm than that of coagulated lymph; very small at first, they gradually enlarge, and, according to their duration, may vary in size from that of a hemp-seed or split-pea to that of a chestnut, or even larger. They have a well-marked cyst, which can, by careful dissection, be separated from the yellow, inorganic substance contained in them, and from the glandular substance of the testicle in which they are imbedded; the yellow substance within the cyst has sometimes a nucleated arrangement. It is proved to be inorganic (unorganized, he means, we have no doubt!) by not receiving any injection, when the testicle has been most successfully injected"—pp. 23-4. This last circumstance is mentioned in contrast to the susceptibility of injection of the deposition observed in the other form of disease (*vid. p. 22*). Mr. Hamilton makes no allusion to having used the microscope in his examinations, and we therefore presume that he did not employ it. Now, by comparing his details of the *post-mortem* appearances with those given by other observers, *e. g.* Mr. Curling and Cruveilhier, we think it most probable that many, at least, of the cases which he cites as being tubercular were not really so, but were instances merely of the simple form of chronic syphilitic orchitis. Mr. Curling describes the deposits in the latter variety of the affection as being soft at first, gradually becoming firmer; in some instances there being but a single deposit, in others several interspersed throughout the testis, sound portions intervening; sometimes these masses are very small, "like round, isolated, yellowish-grey bodies." This fibrin sometimes remains for a long period unorganized; thus Mr. Curling

says, "I have never succeeded in tracing vessels into it, but the vessels of the testis generally are enlarged, and appear more numerous than usual" (p. 317); of course, therefore, much stress cannot be laid upon the statement mentioned by Mr. Hamilton, that the tubercular may be distinguished from the fibrinous deposit, by the non-susceptibility of the former to the entrance of an injection.

With respect to the treatment of the complaint, Mr. Hamilton thinks that the *simple* syphilitic orchitis is most readily cured by the internal and external employment of mercury; and that the *tubercular* variety is best treated by a combination of the same method with the use also of iodide of potassium internally. This treatment seems to have been eminently successful in Mr. Hamilton's cases, and, in those which he calls *tubercular*, more successful, we should think, than it is usually found to be.

In conclusion, we think that the great fault of Mr. Hamilton's essay is, that he has not sufficiently compared his own observations and impressions with those of other writers; and consequently he has, we fear, been sometimes led astray.

We shall be happy, however, to renew our acquaintance with him, on the appearance of his second essay.

F. W. S.

ART. XXI.—*Report of the Committee of Internal Health on the Asiatic Cholera, together with a Report of the City Physician (DR. HENRY G. CLARK) on the Cholera Hospital.* Boston, 1849: 8vo. pp. 182.

In the epidemic of 1849, the first death from cholera at Boston took place on the 3d of June, and the last on the 13th of September. The disease continuing thus to prevail for nearly four months. We have no account of the entire number of cases that occurred during this period. The number of deaths reported at the register's office was 611; 160 were Americans, of whom 79 were Bostonians.

The disease was chiefly confined to that portion of the population who were destitute of the common comforts of life, or whose habits were intemperate, and to those localities which were over-crowded with inhabitants and deficient in ventilation, drainage, and cleanliness. Insulated instances of the disease were noticed in even the most salubrious portions of the city; while, from the general influence of the epidemic cause of the cholera, no class of the community were perfectly free; still, the number of those in easy circumstances, who were actually attacked by the disease, were so small that they might almost be overlooked in the history of its visitation.

The general opinion of the physicians of Boston seems to have been opposed to the contagious character of the disease. In the cholera hospital there were about twenty-five attendants, exclusive of medical officers, at different times, all of whom were more or less constantly in proximity to the subjects and their excretions, and many of them were only for a very few hours at a time out of the ward. Four physicians and four medical students were engaged in the duties of the hospital; two of the latter for a short period only. Of the others, the students were untiring in their devotion to the sick; often irregular in their meals, and having a much smaller allowance of sleep than nature is supposed to require. The physicians spent from six to eight hours daily in the house, until about the close of the epidemic; and when the number of patients was large, were often engaged in the duties properly belonging to the nurses. Of all these attendants, but two had the symptoms of the disease, and in one of these they were not all present, and in the other rice-water discharges were entirely wanting. Two of the attendants had cholera at the time they entered the house, and neither of them had any return of the disease.

The first patient was received in the hospital on the 29th of June, the last on the 29th of September. During this period the entire number received was 262; of these 166 died and 96 recovered.

We shall present, almost entire, the account given of the *post-mortem* appearances detected in the examinations made at the hospital.

"The most remarkable and constant appearances were the following:—

"1st. An unusual dryness of the pleura—particularly where the anterior edges of the lungs overlap the pericardium; so that, on raising them, the two pleural surfaces separated from each other with some difficulty, and presented a dry and wrinkled appearance, instead of their usual moist and polished aspect.

"2d. A nearly empty condition of the pericardium; that cavity often containing not more than eight or ten drops of fluid.

"3d. The peritoneum was smeared with a thin layer of slimy opaline secretion, which was drawn out into minute threads on separating the convolutions of the small intestines. When this substance was not in sufficient quantity to be visible on the peritoneal surface, it could be collected by drawing a few coils of intestine through the fingers, when its slimy, sticky feel was easily recognizable.

"4th. A moderate swelling and opacity of Peyer's patches, and of the solitary glands of the lower part of the small intestines—in the large intestine, a similar development of the mucous follicles, the mouths of which were often widely open, and sometimes marked by a black point.

"5th. A shrivelled condition of the spleen, with deficiency of blood.

"6th. A completely contracted and empty state of the urinary bladder, the mucous surface of which was smeared with a thickish creamy secretion, sometimes abundant, sometimes moderate in amount.

"7th. The mucous surface of the vagina was smeared with a somewhat similar secretion, but thicker and less opaque than that in the bladder—rather like thick starch in consistency and aspect.

"The whole number of recorded autopsies was 33; of these subjects, 12 were males and 21 females. The large majority were adults. The youngest was eight, the oldest sixty years of age. In fifteen cases there were marks of previous disease; mostly tubercular deposits, peritoneal adhesions, fibrous tumours of the uterus, &c. &c. In this are not included such alterations as old pleuritic adhesions and simple ovarian cysts; these lesions being everywhere so frequently met with. In five cases only was there any previous disease in an active condition, viz., two of pulmonary phthisis, one of tubercular pleurisy, one of cirrhosis of the liver, and one of a fibrous tumour of the uterus, which had induced redness and softening of part of the uterine substance.

"*Rigor mortis* was established in every instance. In one case it was slight, and in a few unusually strong—generally, neither deficient nor excessive.

"The *blood* was not so much altered, in its gross appearance, as might have been expected from previous accounts. It has been represented as quite fluid and destitute of coagula. In point of fact, the coagulum was, as a general rule, remarkably deficient in quantity, or consistency, or both; but not, by any means, universally. In two cases, the coagulum in the heart was unusually abundant, and of firm consistency; in eight, it was moderate in amount, and of natural firmness; and in twenty, it was small, trifling, or insignificant in quantity, and loose, gelatinous, or semi-fluid. In three cases, only, was it entirely wanting. Coagula, however, often existed in the heart, when they were not to be found in any other part of the body.

"The consistency of the fluid part of the blood, after death, varied considerably. In some cases no remarkable alteration was observed; in some, it was recorded as natural; and, in two or three, it was unusually thin and fluid. In fifteen cases, it was more or less thick and tarry, either throughout the system, or in particular situations. For, what was sufficiently remarkable, the consistency of the blood often varied in different vessels in the same subject."

"No constant relation was found to exist between the consistency of the coagula and the length of time the patient had been ill."

"In five cases, there was a dusky red staining of the endocardium, or some of the lining membrane of the vessels, owing to the solution of the blood globules, and consequent imbibition of the colouring matter. This took place occasionally, in certain situations, while the remainder of the vascular membrane was free from alteration." "This process had, apparently, some connection with the consistency of the blood, though not, perhaps, precisely that which we should expect; the staining sometimes being most strongly marked when the blood was thickest."

"In fourteen cases, *ecchymoses* were observed in various situations; mostly on the pericardium and external surface of the heart, or internally, immediately beneath the endocardium; occasionally in the cellular tissue of the lungs, on the surface of the kidneys, and between the lobules of the pancreas.

"The *brain* was, at most, universally natural in colour, vascularity and consistency. In three cases only was there any appreciable softening of the cerebral substance; and in three, some bloody engorgement, viz., in one case, of the hemispheres generally; in one, of their superficial parts; and in one, of the lining membrane of the ventricles. The effusion of clear or reddish fluid into the arachnoid cavity, among the meshes of the pia mater, and into the lateral ventricles, was a much more common occurrence. This, however, was moderate in amount; the fluid in the ventricles varying from a few drops to two drachms. In three cases only was the quantity of fluid in the ventricles considerable: in one, these cavities were said to be filled with the fluid; in another, the quantity was estimated at one ounce.

"The most remarkable circumstance noticed in the head was the presence of a quantity of dark, thick, bloody fluid in the arachnoid cavity, over the posterior part of the convexities of the hemispheres, just sufficient to smear the arachnoid surfaces, the arachnoid itself remaining at the same time quite natural. This appearance presented itself in fifteen cases. When first observed, it was so remarkable and unexpected that it was thought the blood might have escaped accidentally from ruptured vessels, through some carelessness in separating the skull from the dura mater; but it occurred so frequently afterwards, and always in the same situation, as to leave no doubt that it was a true morbid appearance, and a consequence of the disease. Considering its constant situation at the most dependent parts of the brain, and the fact that the arachnoid membrane itself always retained its natural transparent and polished aspect, this appearance seemed to be, in all probability, rather a post-mortem transudation, owing to the peculiar condition of the blood, than any effusion which had taken place during life."

Pains were taken to determine this point in one case. The patient lay upon her back until the moment of death, when the body was turned immediately upon its left side and kept in that position until examined, sixteen hours afterwards. In almost every other case the exudation was similar on the two sides of the brain. In this it was trifling, light coloured, and thin to the right of the longitudinal sinus, but on the left side, copious, dark coloured and thick. In one case, besides the above effusion,

"There was a thin plate of red *coagulum* on the superior surface of the cerebellum which had taken the form of the cavity into which it was effused. This effusion, apparently, must have taken place during life, and at an early period of the disease, since the coagulum was considerably firmer than that in any other part of the body.

"Nothing was observed in any instance like the *sticky varnish* described by Tardieu as coating the surfaces of the arachnoid."

"The *spinal cord* was examined in two cases. In the first, in which death took place in the choleric stage, it was absolutely natural in every respect. In the other, in which death took place in the febrile stage, it was decidedly softened in the cervical portion, and a little, also, in the dorsal, with some bloody oedema of the adjacent cellular tissue. These were the only alterations observed.

"Though congestion of the heart and lungs may very possibly exist during the early stages of the disease, yet it was not generally found to any great extent after death. In a majority of cases the lungs were natural in appearance, except for that moderate degree of engorgement of the dependent parts, which we are not surprised to see in any subject. In three cases there were marks of unnatural congestion. In six, the lungs were deficient in fluids, dryish, much collapsed and shrivelled. In one case, there was general emphysema; in two *ecchymoses*, and in one, where the patient had secondary fever, pneumonia.

"The right cavities of the heart contained a moderate quantity of blood, in fifteen cases, and in thirteen they were full. They were absolutely distended in only three; but these were not the same three cases in which the lungs were

congested. In two cases, the quantity of blood in the heart was deficient. The left ventricle of the heart was firm and thoroughly contracted in nine cases. It was more or less deficient in firmness in thirteen, and in ten it was completely flaccid. In one case its condition was only remarked as 'natural.'

"*Contents of the alimentary canal.*—These varied greatly in quantity, colour, and consistency. They were thick, thin, gruelly, grey, yellow, yellowish, white, pink, reddish, or puriform. They were sometimes like soap and water; sometimes thickish and dull red in colour, as if mixed with red paint; sometimes they presented the appearance of true 'rice water;' *i. e.*, a thin, whitish, opaline fluid, which deposited a quantity of very fine white flocculi, looking, when collected at the bottom, like a layer of pure pus. Almost always the contents of the stomach and the small and large intestines differed from each other in colour, consistency, or both." "On several occasions, the ordinary reagents showed the presence of albumen in the fluid part of the intestinal contents in considerable or moderate quantity. Examined by the microscope, the flocculi suspended in the rice-water fluid invariably consisted of columnar epithelium floating about in larger or smaller masses, or as detached cells. These epithelium cells were so abundant and well defined as to leave no doubt that they constituted nineteen-twentieths of the mass of the flocculi."

In reference to the opinion advanced by Dr. Gairdner of Edinburgh, that the exfoliation of the epithelium of the intestinal mucous membrane, giving rise to the presence of these cells in the dejections and contents of the alimentary canal, is entirely a *post-mortem* occurrence, owing to the maceration of the intestinal mucous membrane by the contained fluid, the report before us presents the following remarks:—

"If maceration is the only cause of the separation of such an enormous quantity of epithelium, how shall we explain its occurrence in other situations, where no unusual amount of fluid has existed? The mucous surfaces of the vagina, and of the urinary bladder are invariably smeared with a thick, whitish, pasty, or creamy secretion, which, on microscopic examination, is seen to consist entirely of detached epithelium cells, mostly perfect in shape, and generally distinctly nucleated. But *these* passages have not been subjected to maceration. The urinary bladder, indeed, is completely empty, and from the first moment of the disease, has been deprived of the fluid which it contained in health. Dr. Gairdner's opinion does not, therefore, seem entirely well-founded. The fact that epithelium cells are not so distinctly recognizable in the cholera stools passed during life, is probably to be explained by the circumstance that, in their passage through the intestinal canal, they become, to a certain extent, disintegrated. We have sometimes seen, mixed with the columnar epithelium, small roundish bodies like the nuclei of destroyed or unformed epithelium cells. Since the violent purging, in cholera, very commonly ceases during the last hours of life, we can easily understand why the epithelium cells, thrown off after that period, should remain uninjured. The bowels are then comparatively quiet, and they are not so much exposed to the causes of injury as those which were evacuated in the earlier stages of the disease."

"The internal surface of the stomach and intestines was almost universally pale, or natural in colour. Its usual appearance was that of general paleness, with slight or moderate redness in some parts. It was very common to find the small intestines generally pale, stained yellow at their upper extremity, and moderately reddened toward the lower part of the ileum. In no instance was the redness general. The intestinal villi were almost always unusually distinct, appearing tumefied, and whitish opaque in colour. The spots of redness were not unfrequently produced by scarlet colouration of the villi, while the rest of the mucous membrane retained its natural paleness. This condition was very readily distinguishable on close examination.

"The *kidneys* did not usually present any remarkable alterations in appearance; the most common being flaccidity of tissue, without noticeable increase or diminution in volume. Beside this, the kidneys were occasionally entirely destitute of their ordinary renal odour, and exhaled from their cut surfaces a very distinct and peculiar smell, resembling that of molasses. This was noticed in only four instances; but as our attention was not directed to this circumstance until a late period in the epidemic, it may have existed more frequently."

It is remarked that decided variations took place during the course of the epidemic, in the frequency of certain *post-mortem* appearances, as well as of some of the symptoms during life. At first, the coagula in the heart were not unfrequently moderate in quantity and consistency, and sometimes even remarkably abundant and firm. Afterward, however, they were almost invariably deficient and loose, or even entirely wanting. In the early part of the epidemic, also, spots of ecchymosis on the heart, externally or internally, were an almost constant symptom; at a later period this appearance was rarely met with.

The account of the treatment pursued in the cholera hospital at Boston will require only a passing notice. The effects of the remedies as there exhibited will scarcely advance us a single step in our investigation of the therapeutics of cholera. The late period of the disease in which the patients were sent in precluded the possibility of any beneficial result being derived from the best devised and most energetic treatment. Everything that has been suggested or imagined as a remedy in cholera appears to have been tried; and when these were found to fail in arresting the fatal course of the malady, the gentlemen having charge of the hospital were willing to try the popular forms of empirical practice. "*The wet sheet* (packing, so called) was tried faithfully; but every patient upon whom it was tried died." Homeopathy was next invoked to lend its aid; but its professors, who were too cunning to put to so severe a test the virtue of drop doses of camphor-water, as an infallible cholera specific, refused their aid. Though no doubt they make the most of the invitation extended to them, quoting it as a confession, on the part of the regular physicians, of the greater certainty of homœopathic treatment in the arrest of cholera.

Narcotics, we are told, totally failed of any beneficial effects; *stimulants* almost always failed; *electricity* failed entirely; *calomel* produced no evident effect; the same is true of *quinia*. *Ipecacuhana* and *capsicum* in powder, about forty grains to a drachm of each, were always exhibited in the early cases, with at least temporary relief. The pulse, which was often gone, returned at the wrist, and with it, the warmth of surface. It is queried, how much the omission of this treatment, if anything, had to do with the greater mortality in later cases. "*Tannic acid* was frequently used in enemata, in proportions of five or six grains to the ounce of fluid, and almost always with temporary relief of the purging. By the stomach, in doses of two or three grains, it sometimes appeared to check vomiting." The *astringents* and *aromatics* had usually but little if any effect. *Ether*, by inhalation, relieved the cramps, but appeared to have no effect in arresting the fatal course of the disease. *Cathartics* were never used until the dangerous period was supposed to be passed. *Venous injection* was tried but abandoned, its effects being merely temporary. *External heat* and *rubefacients* were freely employed: but generally, after collapse was marked, these remedies had no other effect than to annoy and irritate the patients. "Those patients who could be induced to remain covered with blankets fared the best, with or without other artificial heat. Those who were restless and threw off the clothing invariably died." *Drinks*, of whatever nature, were useless. Those who drank the least, vomited and purged the least. "Those patients to whom drink was steadily refused, neither vomited nor purged freely afterwards—often not at all. They more speedily grew warm, and those who, for an hour, were kept closely enveloped in blankets, and *took no medicines* and *got no drink*, suffered the least, and were the most likely to recover." *Hot baths* were painful to the patients, and they generally sank speedily after their use. *Cold sponge baths* were more grateful, and even during collapse they seemed for a short time to revive the patients. Bladders of ice to the head and cold effusion were resorted to, advantageously, in cases of violent delirium. *Bleeding* by the lancet and by cupping was several times resorted to. Before the cramps ceased great relief was experienced from the lancet; later, like other remedies, it was of little avail. "Of bleeding, in an early stage of the disease, we are inclined," the reporter remarks, "to speak quite favourably, though not with so much enthusiasm as many East Indian surgeons do. The extraction of blood from the nape of the neck by cups, was, in a few cases, useful." *Creasote* sometimes seemed to relieve the vomiting, but not so invari-

ably or effectually as the *wood naphtha*, which failed in no case in which it was used. It was given in various doses, clear, from twenty minims to a drachm.

"Much benefit was thought to be derived from the exhibition of *saline medicines*. Stevens' mixture of the chlorate of potash, in solution, with the hydrochlorate and bicarbonate of soda, was the form in which salines were usually given. We used larger doses of the chlorate, generally, than Stevens recommends, but are not able to say that this was an advantage."

In all the fatal cases, *post-mortem* contractions were either seen or could be excited. They generally commenced about fifteen minutes after death. In one case the muscular action was so great, thirty minutes after death, that the nurses supposed the subject to be still alive. The external muscles in this case were in constant action, the motions progressing, like tides, from one to the other of their extremities. The contractions were strongest in the extensors of the thighs.

Upon the whole, the report before us is a highly interesting one. Although it throws but little light upon the pathology and treatment of cholera, it records facts of great importance to the future historian of the disease. D. F. C.

ART. XXII.—*The Annual Report of the Board of Health of the City of New Orleans*, for 1849. 8vo. pp. 16. New Orleans, 1850.

THIS is a very interesting report. We confess, however, that we cannot commend the style in which it is written, but are disposed to overlook its deficiencies in this respect, in consequence of the valuable facts and suggestions it presents in reference to the sanitary condition of the great emporium of the south.

The report is made in obedience to a provision contained in the Act passed in 1848, for the establishment of a Board of Health, in and for the parish of New Orleans, requiring a report as to the health of the city for the preceding year, and suggestions as to the means for improving the same, to be made annually to the several councils.

The importance of an accurate registration of deaths in every community is pointed out, in the commencement of the report, in language scarcely too strong:—

"If a city or country is ignorant of the diseases fatal to its population; if it does not know the age at death, sex, colour, length of residence, occupation, and in what part of the city death took place, it must be ignorant of one of its most important duties; that which is dearest to every human being, its *sanitary condition*; the influence of the place on the lives of the inhabitants; the actual climate in which they live—the value of life there, or expectation of living; on what portion of the population it bears with greatest or least severity, or what part of the city requires ameliorations; in fact, whether that community is advancing or retrograding in these important particulars: and all laws intended to benefit the sanitary condition without a previous knowledge of *what that sanitary condition is*, are deficient in the basis of all wise legislation, and trifle with common sense."

Though badly constructed, the foregoing sentence expresses truths which it is the duty of physicians throughout our Union to press upon the attention of the legislatures of the several states, in the hopes of inducing them to provide by law for the accurate registration, not only of the deaths which take place in each section and locality within their jurisdictions, but also of the births and marriages, without a knowledge of which the actual sanitary condition of any given place can scarcely be determined with certainty. To use the language of the report before us:—

"All other modes of estimating the prosperity of a community are deceptive; it is in vain to look at the increase of the exports and the imports; its growth in area; its splendid architectural ornaments, even its increase in population, *all are illusory*; the true touch stone is its *SANITARY CONDITION*;—the deaths to population; the average age at death; the real value or expectation of life," and, we would add the ratio of births to marriages, and of deaths to births.

"What is wealth without health, or continuance of life to enjoy it? Immigration may fill up the gaps caused by death; a floating population may, in a few months, accomplish your principal commercial business, and your fine port may be but a depot for the exchange or barter of commodities, for people living in different parts of the world, utterly indifferent to your interests."

After some remarks upon the general causes peculiar to New Orleans, which affect prejudicially the health and life of its inhabitants, the report proceeds to notice the leading diseases which prevailed in that city during the year 1849. From this portion of the document we derive the following remarks:—

"With reference to the great epidemic principle giving rise to *cholera*, whose devastations have been so severe throughout our country, it is some consolation to know (poor as that is) that it derived no *influence from our position*. Notwithstanding its originating in a latitude, climate, and on a great stream surrounded with swamps, somewhat similar to our own, there are moral aspects, grades of civilization, and wide extension of comforts, that produce an immense bearing on the disease, widely distinguishing our happy country from the down-trodden millions of oppressed India; and the difference between that country and this is almost as great as between the present and fifteenth century, when plagues so often ravaged the earth, with a severity far exceeding that of latter times. It is farther observable, that there is scarcely a large city in the Union where it has prevailed that it has not been *more severe* than here, notwithstanding the peculiar character of our floating population."

"Medical science has done much for its relief; when left to itself *cholera* is almost uniformly fatal, but, with our present knowledge of its preventives, the scourge itself, to the prudent and temperate, excepting in embarrassed constitutions (?), is scarcely ever to be dreaded. It is some consolation, then, in relation to this disease, which cometh and goeth under laws and conditions so little understood, that each individual carries his safeguard under his own control in the correctness of his personal habits. The liability being individual, the municipal power can only aid by cleanliness and ventilation.

"Accompanying the belief that, as it originated in a climate in many respects similar to our own, there was, probably, one feature common to both in which they participated, that being the prevalence of great moisture, from similarity of topographical situation; and that, consequently, it may be expected to remain permanently among us. By reference to the chart, it is gratifying to perceive that this is a great mistake, and that *dryness*, instead of *moisture*, has been so remarkable as to appear to act in the line of causation. We had, during the worst of its devastation, a prevalence of *dry fogs*, once noticed by Humboldt, in passing the Andes, and centuries ago, by others, as accompanying (and probably causing) epidemic influenza (the uniform precursor of *cholera*). These lines of aridity (force of evaporation and low hygrometer) and *cholera* are marked on the chart, and it really seemed that the disease declined as the moisture increased and the rain fell.

"The amount of mortality produced by it during the year has been three thousand one hundred and seventy-six."

"The mortality from the class of *fevers*, the great outlet of human life in the south, is small, constituting about 14.58 per cent. of the entire mortality; of which, more than half, or 55.30 per cent., is from *yellow fever*." "Whether we shall ever get rid of the latter is a problem impossible to solve with the lights at present before the profession; *we don't know its cause (causa sine qua non)*. That all fevers, this inclusive, will be more rare as the laws of general and personal hygiene are applied to communities and individuals, we know from the results of actual experience, and, therefore, there is no doubt, as these improvements progress, yellow fever will, as already remarked by professional men, lose its individuality, and become blended with ordinary fevers."

"The next class of diseases to which your attention is invited is the *pulmonary*; and here we have especially to lament that deficiency in the certificates, first noticed, in relation to 'residence;' many doubtless visiting this mild climate on account of its kindness to pulmonary invalids, and here falling victims to the disease already beyond the reach of art or climate, and adding to our mortality in that respect. The whole class amount to 876, of these consumption

embraces 592; leaving only 284 for all other pulmonary diseases! By the following table it will be seen that, notwithstanding the addition made to our mortality by immigrants and visitors with these diseases, yet we are more favoured in these respects than any large city in this hemisphere.

	Deaths from phthisis to total mortality.	Deaths from all pulmonary diseases to total mortality.
Philadelphia,	14.84 per ct.	28.57 per ct.
New York,	17.50 "	28.08 "
Havana,	19.50 "	25.07 "
Boston,	15.13 "	23.97 "
Baltimore,	18.20 "	23.33 "
Charleston,	18.27 "	22.73 "
Mexico (city),	2.45 "	16.76 "
Norfolk,	11.01 "	12.78 "
New Orleans,	9.37 "	13.87 "

"The above extraordinary results have been made from *official sources*. The Reporter took the years as he had access to them, mostly the year 1845, and, from most of them he deduced the causes of death, *not diseases*, before he made the ratios."

In regard to Philadelphia, the ratio given above is not perfectly accurate. From the bills of mortality for thirteen consecutive years, omitting the still born, and deaths from old age and casualties, we find that the deaths from phthisis amount to 14.4 per cent. of the entire mortality; while the deaths from all diseases of the respiratory organs including those of the larynx, croup and asthma, constitute but 26.79 per cent. of the total mortality.

The entire mortality of the city of New Orleans for 1849, was 9862; of these deaths about 29 per cent. occurred in the various hospitals. Deducting 3176 deaths, from cholera, and 372 from causes other than disease, leaves a net mortality of 6314; being at the rate of 1 to every 16.67 of the inhabitants or 5.99. The stationary population being estimated at 105,347; based upon an increase of 5.32 per cent. annually over the population of 1847, when the last census was taken.

"This," the report remarks, "is a very large mortality: of course a very considerable portion of it being derived from that mass of floating population not enumerated in the census, and which should have been stated in the mortuary certificates, had they been made according to the request of the board."

After presenting a number of judicious suggestions for the improvement of the sanitary condition of New Orleans, the report enters into an examination of the probable chances of life in that city, compared with these chances in other localities. With an extract or two from this portion of the document, we shall close the present notice.

"The average life in no country reaches three score years and ten, announced in Scripture as the period for the duration of the life of man. The average age at death in the northern cities—doubtless owing in a great measure to the large mortality in infantile life—is from 19 years 9 months to 20 years 3 months, and in some of the cemeteries where destitute foreigners from the crowded parts of the city of Boston are buried, it is reduced to 13.49. In the south, where it is so much more favourable to infantile life, the average age is much greater. In Charleston the average age at death is near 36 years. In Vera Cruz 24.6, and in the city of Mexico 27.7; while in the city of New Orleans, the average age at death for the last year was 26.69, and in a series of the years, the aggregate of all the cemeteries was 22 years 6 months 3 days."

"Of all countries on record, the rural parts of England and Massachusetts are probably most favoured with respect to infantile life; and yet in Massachusetts 40 per cent., and in England 47 per cent., die while they are going through the process of development, and before they enter upon self-sustaining life, in their 16th year. In New Orleans we have not the data to institute an exact comparison at these ages, but very near it; and we find that here only 36.98 per cent. die under 20. In this city, data of all kinds are defective; we have, nevertheless, been able to construct a chart, to show the real value of life

here at successive ages, and at different periods of the year. It is too lengthy for this report. We may, however, state that it shows the extremely mild character of the climate at all periods of life under 20, and above 50, and during all months of the year, and that the chief fatality occurs from 20 to 40 (the ages of the immigrating population), and the period, the latter part of summer. Notwithstanding all this, the following statement shows that we have a larger proportionate population at the *productive age*, that is from 20 to 50, than the most favoured parts of the world: viz., in

every 10,000 in the United States, there are 3,708,	
“ 10,000 “ Louisiana, “ 3,753,	
“ 10,000 “ England and Wales, “ 4,028, While there are in	
“ 10,000 “ New Orleans, “ 4,924.	

“From all the information we can procure, it is satisfactorily demonstrated, that in countries where from climate, position, and refinement, a very small part of the population reach the age of their natural destiny, they approach it nearer, in proportion as they obey the laws which are adapted to the guidance of life: here, notwithstanding our deficiencies in many respects, sufficient is ascertained to hope for as near an approximation to the primeval age as anywhere, and reference to the table showing the number of the dead above 80 and 100—11.58 per cent. of the first and 2.26 of the second—buried at the Catholic cemetery; the chief cemetery of the ancient Creole population of the city—will satisfactorily prove the fact.”

An interesting chart and several valuable tables accompany this report. Could all our boards of health be induced to publish annually reports similar to the one before us, it would be the means of accumulating important materials for determining the relative sanitary condition of our different cities, and for aiding us in our investigation of their respective endemic diseases.

D. F. C.

ART. XXIII.—*Nonnulla de Morbis Unguium*. Auctor LUDOVICUS BENJAMIN, Hamburgensis.

On some of the Diseases of the Nails. By LEWIS BENJAMIN, of Hamburg. Berlin, 1849: 12mo. pp. 32.

In looking over a number of inaugural theses, published by the medical graduates of the Berlin University, of the session of 1848, we were struck with the title of the one before us. We felt curious to know what are the diseases of the nails, with which, we confess, we were previously entirely unacquainted. The morbid conditions of these tegumentary appendices treated of by Dr. Benjamin are hypertrophy and atrophy; panaritium or whitlow; incarnation of the nail, and onychia maligna.

The first two may, it is true, be considered with propriety as strictly diseased conditions of the nails, but certainly neither of the others, excepting so far as they occur in the neighbourhood of these parts, and very frequently cause their destruction.

We have met with numerous instances of what the author has denominated hypertrophy and atrophy of the nails. One or more of the nails, particularly those of the toes, though occasionally of the hands, will become greatly thickened, and extended far beyond the extremity of the phalange to which they appertain, often bending over the end of the finger or toe, and terminating in a sharp, claw-like point. The thickening is generally to the greatest extent in the centre of the nail, causing it to assume a pyramidal shape; in some instances, we have known the thickening to occur in bands arranged either longitudinally or transversely. The affected nail becomes opaque, has a rough, often scaly, surface, and a dark, dirty yellow, or brown colour. On the other hand, we have seen one or more of the nails, greatly and permanently reduced in length and breadth; often, however, at the same time thickened, rough, and opaque. The actual cause of these changes from the normal condition of the

nails, it is difficult to determine. In some of the cases we have met with, they were evidently caused by undue pressure from badly constructed boots and shoes, or from the tools employed by the individuals in their daily occupations; in other cases, they were the result of lacerated wounds or bruises in which the nails were implicated; in a few, they were consequent upon paronychia, and, in other cases, again, they appeared to occur spontaneously, or, at least, without any assignable cause. These changes in the condition of the nails are seldom productive of much inconvenience. When they occur in the nails of the feet they scarcely attract the attention of the individual; those of the finger nails are now and then brought to the attention of the physician, with the hope that he may be able to remove the deformity caused by them.

We know of no remedy for these morbid conditions of the nails. Dr. Benjamin, who describes the state of hypertrophy as occurring invariably in the nails of the feet, especially that of the great toe, recommends for its removal an easy, light shoe of soft leather or cloth, diminished exercise or entire rest of the foot, or, after paring away the nail, to encircle it with strips of adhesive plaster so as to prevent any pressure being applied to it. Believing that the deviation from the normal state of the nails is dependent upon some morbid change in the matrix, by which their symmetrical formation is prevented, we have little faith in the efficacy of any of the measures that have been proposed for its removal.

Dr. Benjamin presents a very good description of that form of whitlow or paronychia, which occurs in the soft part at the edge or beneath the nails. He describes the ordinary treatment: cold applications, leeches, &c., in the stage of inflammation; and when suppuration has taken place, free incisions. The best remedy in the early stage of the disease we have found to be a blister. The inflammation has often been cut short by dipping the end of the finger in water, sufficiently hot to produce immediate vesication.

The nature of what is termed incarnation of the nail has been very generally misunderstood, and from the erroneous supposition that the lateral edge of the nail actually grows into the flesh, the severe and unjustifiable operations, described and recommended in the work before us, have actually been practiced. The whole of the mischief in the cases alluded to is caused by the soft parts at the side of the nail being forced by external pressure—a tight or misshapen shoe, for instance, for the accident is generally in the great toe—against and over its edge. In many instances, ulceration occurs in consequence of this pressure, attended with profuse fungous granulations, and a bloody, sanious discharge. The sufferings of the patient are now such as often entirely to preclude him from wearing a shoe or putting the affected foot to the ground. The edge of the nail appears to be actually imbedded deep in the flesh, and, at first view, it would really seem as though a cure could only be effected by removing the imbedded portion. But no operation beyond that of the entire extirpation of the nail will afford permanent relief; happily they are all unnecessary, as by rest, the treatment of the ulceration by slightly stimulating applications, and, as soon as the tumefaction and excessive tenderness of the parts have been sufficiently reduced, the interposition beneath the edge of the nail of a portion of diachylon plaster or of lint, and a loose, well-shaped boot or shoe, a perfect cure may, in a short period, be effected in every instance.

The onychia maligna, or, as Dr. Benjamin describes it, inflammation and ulceration of the cutis beneath the nail, is a frequent and painful affection. After great and long-continued suffering, the nail becomes separated from the finger at every part except its matrix. An unhealthy ulcer forms about the root of the nail, shooting forth profuse fungous granulations, which bleed upon the slightest touch; the surrounding soft parts become swollen, of a dusky red or purplish blue, and exquisitely tender. If the disease be not arrested, the toe or finger becomes enlarged, bulbous, and ulcerated throughout, and may continue so for a long period; not the slightest disposition to cicatrization being observable so long as any portion of the nail remains attached.

If the case is seen sufficiently early, the ordinary means for the reduction of inflammation should be resorted to: leeches, emollient fomentations, saline purgatives, an elevated position of the part affected, and surrounding the end of the

inflamed finger with a blister. After ulceration has taken place, the best application we have found to be an ointment composed of four parts of basilicon and one of red precipitate; an ointment composed of one drachm of the precipitate ointment, fifteen grains of sulphate of zinc, and one ounce of lard or simple cerate, will often be found of advantage. A plan, originally proposed by Dr. Perkins, of Philadelphia, and recommended by Dr. Physick, was to sprinkle the diseased surfaces with a powder composed of equal parts of sulphate of zinc and corrosive sublimate, and then to cover them with a pledget of lint soaked in laudanum.

To promote the cicatrization of the ulcer, the patient should be placed in a pure, free atmosphere, take daily out-door exercise, and partake of a light, wholesome diet. The bowels should be kept free by mild laxatives, and when there is evident derangement of the alimentary canal, occasional doses of blue mass, and light bitters or tonics, will be advisable.

When only the upper portion of the nail is detached, the ulceration not implicating the matrix, after removing carefully the loose portion with the knife or scissors, under the treatment just pointed out, the ulcer, in general, soon assumes a healthy aspect and cicatrizes perfectly; but when, as is generally the case, the disease commences at the lower part of the nail, a portion of its root being detached, unless the whole of the matrix is removed, the ulceration may be kept up, and the patient's sufferings prolonged for many months.

The foregoing remarks upon the diseases treated of in the dissertation of Dr. Benjamin, have been suggested by a perusal of its several sections. While we have been pleased, in general, with the accuracy of the author's descriptions, and much that he advances in regard to the etiology of the so-called diseases of the nails, we differ from him very far as to their proper treatment. That laid down by him for the cure of incarnation of the nail is founded upon a misconception of the nature of the accident it is intended to remedy—it inflicts unnecessary suffering, and is inferior even in efficacy to the plan we have referred to above.

D. F. C.

ART. XXIV.—*Southern Medical Reports; consisting of General and Special Reports on the Medical Topography, Meteorology, and Prevalent Diseases in the following States: Louisiana, Alabama, Mississippi, North Carolina, South Carolina, Georgia, Florida, Arkansas, Tennessee, Texas.* To be published Annually. Edited by E. D. FENNER, M.D., etc. etc., of New Orleans. New Orleans and New York: Vol. I. 1849: 8vo. pp. 472.

It is gratifying to observe the attention that is beginning to be bestowed by our physicians to the investigation of the medical topography, in connection with the prevailing diseases, of the different sections of the United States. The investigation is a highly important one, inasmuch as it is from the materials it is calculated to afford that we are to derive our means for the elucidation of some of the most interesting points in relation to the etiology of many diseases, especially of those endemic to particular sections or districts of country, or to particular localities.

The work of Dr. Drake, on the medical topography and diseases of the interior valley of North America, and the cotemporaneous one of Dr. Fenner, on the same subjects in reference to the several southern States, furnish most valuable contributions towards a full and accurate exposition of the etiology of the prevalent diseases of a considerable portion of our wide extended country. While we bespeak for the works of these gentlemen the liberal patronage of the profession, we cherish the hope that their labours may be the means of stimulating physicians in the Northern and Middle States to an investigation of the medical topography and prevalent diseases of their own neighbourhoods. Were physicians, in the different sections of each State, to devote a portion of their time to such investigation, a series of observations would soon be accumulated, from which results of incalculable value might be deduced.

The work of Dr. Fenner—a volume of which it is his intention to publish
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annually—consists of reports on the medical topography, meteorology, and prevalent diseases of the several Southern States, from physicians residing in different portions of those States. The plan is an admirable one, and cannot fail to render the work a rich collection of materials, in relation to the subjects indicated, from which the etiologist may derive the clearest light to assist him in the investigation of the causation of endemic diseases.

Derived from different sources, and embodying observations more or less numerous and extended, and recorded with more or less minuteness and precision—the authors occasionally throwing aside the character of simple chroniclers of the actual facts and phenomena they have observed, to devote themselves to the more seductive task of weaving hypotheses—the reports contained in the volume before us differ, as would very naturally be expected, somewhat in value: they are all, however, interesting—several of them peculiarly so.

An analysis of the contents of this first volume of *Southern Medical Reports* would occupy considerable space, and we are persuaded that it would be unnecessary to attempt such analysis, as all who are interested in the subjects embraced in these reports, as well as those who are really desirous of promoting a national medical literature, will not fail to provide themselves with a copy of the work.

In the report of Dr. Fenner, on “the fevers of New Orleans,” will be found some important suggestions in relation to the nature and treatment of the yellow fever of that city. We have long entertained the opinion that the malignant form of fever endemic to the city of New Orleans, and usually denominated yellow fever, was nothing more than an aggravated form of bilious fever. This opinion is confirmed by the statements of Dr. Fenner:—

“In New Orleans,” he remarks, “we have met with all the forms of endemic fever which were familiar to us in the country (West Tennessee, Mississippi, and Madison Parish, La.), with the addition of yellow fever and ship fever, or genuine typhus. We have found those common to the city and country to prevail at the same season, and in a similar manner, excepting that we met with a more rapid and malignant congestive fever in the country than in the city, and the bilious remittents of the country retain their character throughout more than they do in the city. Here, in the summer and autumn, they have a decided tendency to *crisis by hemorrhage*. This makes *yellow fever*—it forms the true characteristic difference between the high grades of summer and autumnal fever in the city and country, and *must depend on locality and attendant circumstances*. We have intermittent, remittent, and continued fevers, alternating in type and running into each other, just as they do in the country. Intermittent fever prevails here throughout the year as it does in the country. During the healthiest years, it predominates over all other types; but during the sicklier years, in the country, it runs into remittent, bilious, and congestive, whilst in the city it runs into yellow fever.”

The true yellow fever we believe to be a disease strictly specific in its character—and very distinct from intermittent or bilious remittent fever—well marked in its diagnostic characteristics, and, in a strict pathological sense, never connected with nor terminating in remittent fever.

It is due to Dr. Fenner to say that, in the course of his report, he somewhat modifies his opinion in regard to the character of yellow. After stating, explicitly, that intermittents, remittents, and yellow fever are “all the *same disease, differing only in grade and stage*,” he subsequently declares that he does not assert, with Rush and others,

“That yellow fever is nothing but a *high grade* of *bilious* fever; for we admit that the latter is sometimes the most malignant of the two, without displaying the characteristic features of the former. Our position is, that *yellow fever is only one of the forms of endemic fever* (malarious, if you will), *which derives its characteristic features from the locality and attendant circumstances where it prevails*.”

Dr. Fenner’s plan of treating yellow fever, we give in his own words:—

“When called to a case within twenty-four or thirty-six hours of the attack, we seldom failed to cut short the fever by large doses of the sulphate of quinine

in combination with opium or morphia, frequently followed by a little blue mass or calomel. Our usual mode of proceeding in this stage is, to order, at first, a hot mustard foot-bath, and a purgative enema—then to give to an adult twenty-five or thirty grains of quinine with twenty-five or thirty drops of laudanum, or one or two grains of opium, or the fourth of a grain of sulphate morphiae, at one dose. This would generally reduce the vascular and nervous excitement completely in the course of a few hours, throw the patient into a profuse perspiration, relieve all pain, and produce sleep. The bowels were kept open by some gentle means, and more or less quinine was repeated as occasion required. We recollect but one fever patient that required cupping, and we did not have a single one bled from the arm.

“In the early stage of yellow fever, the derangement of the system is *entirely functional*, and consists, chiefly, in *lesion of innervation*. In the advanced stages, it is altogether a different affair. *Organic lesions have then taken place, and the blood is altered*. As soon as the attack is fully developed, the indications are, to reduce nervous and vascular excitement, relieve pain, and keep the principal emunctories (skin, liver, kidneys, &c.) in steady and free action, thus arresting diseased action in the incipient stage. Experience has proved that all this *can be done* by the remedies just mentioned, if resorted to *early enough*. In the advanced stages, you have a different state of things—you have to contend with engorgement of the gastro-intestinal mucous membrane, and of the liver, spleen, kidneys, and brain; a sluggish circulation of altered blood, and an arrest of all the most important secretions. The nervous centres, which first suffered and complained, now become calm and composed, the intellect generally retains its natural clearness, and the patient is often lulled into an illusive sense of safety, whilst the experienced physician knows that *irreparable injury has been already done*. In these latter stages, the physician should abstain from attempting to do too much. The main reliance must be upon the energies of the constitution, which are to be aided and fostered with the utmost circumspection. The indications are, to husband, carefully, the remaining strength, to keep the circulation and excitement as well equalized as possible, to restore the suspended secretions, and to keep up the process of nutrition. To fulfil these, we endeavour to enforce the most perfect quietude, and resort to blisters, warm sponging, fomentations, carminative antacid mixtures, gentle stimulants, and mild nourishment.”

The report, by the same author, on “the epidemic colic which prevailed in the city of New Orleans, during the summer of 1849,” is full of interest.

The majority of the reports, in the volume before us, are in reference to epidemic cholera, as it appeared at different localities in the southern States. We would particularly refer to that of Dr. Booth, “on the cholera of Lafourche, interior,” as one replete with sensible observations in reference to the disease. We lay out of question the speculative opinions of the author; his remarks on the management of the disease are, generally speaking, sound, and deserving of close attention on the part of the profession.

The annual report of the New Orleans Board of Health, for 1849, which is published here entire, we have noticed in another part of the present number of the *Journal*.

We recommend the work of Dr. Fenner to the notice of the physicians of the United States—as well those located in the Northern, Eastern, and Western, as in the southern sections of the Union. As a collection of valuable contributions on subjects of immense importance to all—whether these contributions were originally prepared for the work itself, or appeared originally in one or other of the medical journals of the day—it is deserving of an attentive perusal upon the part of all who desire information in relation to the several forms and locations of the leading diseases endemic to our country, while from its pages facts and observations will be derived calculated to throw light upon the etiology, character, and treatment of those affections which prevail in other portions of the Union than that comprised within the limits of the southern States.

D. F. C.

ART. XXV.—*Ship Fever, so called; its History, Nature, and Best Treatment. The Fiske Fund Prize Dissertation, for 1849.* BY HENRY GRAFTON CLARK, M.D., Member of the Boston Society for Medical Improvement. "Per Ardua." Printed by order of the Rhode Island Medical Society. 8vo. pp. 48. Boston, 1850.

DR. CLARK has not entered into a very elaborate investigation of the pathology of ship fever. His dissertation, nevertheless, presents a very sensible and well written exposition of the peculiar character and treatment of the fever with which, under that name, we have unfortunately become of late years familiar, in consequence of its extensive prevalence among the immigrant passengers from Europe, who have crowded our principal commercial cities and their immediate vicinities.

In one of the hospitals opened for the especial reception of immigrants labouring under ship fever, the observations which form the basis of the present dissertation were made. There two thousand cases of the disease fell under the personal notice of the author; consequently his opportunities for studying its symptomatology and usual course, and the means best adapted to arrest its fatal termination, have been sufficiently ample.

Dr. Clark believes that the disease which forms the subject of his dissertation is identical with that described by Howard, Pringle, Houxham, McBride, Darwin, and others, under the various titles of jail, hospital, or camp fever; putrid malignant fever; putrid continual fever; petechial fever, maculated typhus and English or Irish typhus. And farther, that it is very clearly different from any fever which has hitherto been known in this country. There is every reason to fear that with the present rush of immigrants to our shores from England and Ireland, although it has until recently been only an exotic, it will soon become domesticated among us, and hereafter loiter around or fix itself permanently in the purlieus of all our great maritime cities, if it do not follow the great avenues of travel into the interior, especially into the manufacturing towns.

Dr. Clark believes the typhus fever which has occasionally prevailed in this country, particularly in the New England States, often as an extensive epidemic, is an entirely distinct disease from that known as ship fever, the first being typhoid fever, the latter the true typhus of Great Britain.

No extended examination is, however, entered into to prove the distinct nature of these two diseases. The author contents himself with a simple statement of the leading points in which they differ from each other.

According to Dr. Clark, typhoid and typhus fever differ in their access, their progress, and their termination.

"Typhoid fever is slow and insidious in its attack; often of unknown origin; only contagious in a modified degree, and under certain circumstances; not infectious; there is generally diarrhœa, and often hemorrhage from the bowels; epistaxis; its diagnostic *tache*, consisting of a sparsely scattered pink eruption, is chiefly confined to the abdomen and lower part of the chest, and *disappears* on pressure. The duration of the disease is from two to twelve weeks, the average being about three weeks. An ulceration or inflammation of Peyer's glands is *always found* on post-mortem examination. It attacks subjects in *all conditions* of life, and is *not* prevented by any attention to cleanliness and ventilation.

"Typhus fever, on the other hand, is of sudden and violent access, often seizing the patient *instantly* upon his exposure to the exciting cause; it originates from well-known causes; is confined to those exposed to contagion from the sick, or from exposure in a bad atmosphere, and filthy and badly situated tenements, crowded with animal exhalations; it is infectious, and in the majority of cases is unaccompanied (in its acute form) with diarrhœa. The eruption is very abundant, often being sprinkled over the trunk, head, and limbs. It is of a dirty red colour, does not disappear on pressure, and frequently, as the disease progresses, becomes of a dark brown, which sometimes remains even after death. The eyes are dull and suffused. The duration of the fever is about fourteen

days. There is *no* inflammation of Peyer's or Brunner's glands, although at the same time the whole neighbouring intestine is often seriously affected.

"Finally, the secondary affections of the absorbent system, and the peculiar ulceration of the large intestines (the cause of a most fatal hemorrhagic diarrhoea), are worthy of especial notice as common sequelæ to ship fever. They do not occur in typhoid fever. In fact, the distinctions must be so obvious that the diagnosis of a well marked case ought never to be doubtful."

Although, in the foregoing sketch of the differential diagnosis of typhoid and typhus fever, all the features which characterize each of these diseases are not noticed, still it is sufficiently full and accurate to enable any one to distinguish between them. After all, however, the question, Are these two forms of typhus fever specifically different, or are they merely different grades of one and the same disease? remains unanswered. If it can be shown that in the one there is invariably present an inflammation of the solitary glands and glandular patches of the intestines, which is invariably absent in the other, this, with the difference in the symptomatology and general course of the two diseases, would certainly be sufficient to establish a specific difference between them. But this is still the point in dispute: many assert that the inflammation of the glandiform bodies of the intestines occurs, also, frequently in cases of unquestionable typhus; and we have certainly seen cases occurring on board of immigrant passenger ships where the typhus fever prevailed, or in those who have recently landed from such vessels, marked by the very symptoms described as those diagnostic of typhoid fever, and presenting after death the same lesions of the intestines.

Ship fever, according to Dr. Clark, is communicable by contagion. In the hospital under his charge, on Deer Island, Boston Harbour, all the nurses, who were usually themselves immigrants, were successively attacked, and several of them died. The physician had fallen a victim to the disease, and when Dr. C. first undertook the superintendence of the establishment, the only remaining assistant physician was sick with the fever. He considers it also to be infectious. He has known a considerable number of instances in which the disease was unquestionably propagated by chests of clothing, &c., without any personal contact with the sick.

"In all probability," he remarks, "one attack of ship fever, as in the case of the other exanthems, generally precludes another; and although there are well-known instances in which the disease has occurred a second or even a third time, yet, as a general rule, the protection is complete; and if the secondary cases do sometimes occur, they are in a milder form and much less to be dreaded. Indeed, from a personal familiarity with nearly two thousand cases, we are sure that this is the *rule*, and that second cases are the exceptions to it; for we are quite certain that we have known more instances of varioloid after small-pox, or second attacks of measles and scarlatina in a greater number of cases than of ship fever. It must be understood that the secondary diseases which occur after the fever, and are only appendages to it, are *not* referred to, for these are frequent and often fatal. The point is, that *second attacks* of the primary fever after an entire recovery are exceedingly rare, even with the greatest exposure."

The disease is seldom propagated from a single patient in a well-ventilated house; even in a large hospital, with strict attention to insure the cleanliness of the persons, clothing, and bedding of the patients, and a proper ventilation of the apartments, the disease will not spread.

"In this particular it differs essentially from typhoid fever, which, although its contagious properties may be considered to be much below those of typhus, yet it will often be found that typhoid fever will persist in spite of the most energetic measures of cleanliness and ventilation. The poison of typhoid fever seems to be of a more subtilie character, and decidedly less amenable to any hygienic rules of this sort."

"Ship fever," Dr. Clark remarks, "like the other exanthems, is ordinarily a self-limited disease, its most usual duration being fourteen or fifteen days, the great majority of cases of the primary fever terminating within that period. Nevertheless, so far as our experience goes, at least two-thirds of all the deaths occur at a much later period. They are caused by the secondary diseases,

which follow, after a certain period of partial recovery, so that they may be considered as relapses."

This corresponds with our own experience. In the cases of ship fever which have fallen under our notice, in the greater number of those which terminated fatally, death was unquestionably the result of the secondary affections—particularly the diarrhœa, which is so liable to occur after a partial recovery from the primary disease. We cannot, however, agree with Dr. C. in regard to the absolute contagiousness of either the typhus or typhoid fever—that the first is communicable in small, filthy, ill-ventilated and crowded apartments, as well as by the filthy clothing of the sick, when shut up from the air, we admit; but, as the author has himself shown, its communicability is effectually prevented by cleanliness and ventilation, which would not be the case if the disease was absolutely contagious. In regard to typhoid fever, it appears to us that the facts with which we are acquainted in relation to its etiology would indicate its dependence upon some inappreciable endemic cause, often limited in extent, and upon a peculiar predisposition to its influence, which certain individuals possess in a much greater degree than others. We have no doubt, however, that it may be communicable under similar circumstances with those which render typhus fever communicable.

The secondary affections common in cases of ship fever, Dr. Clark classes under two principal forms, which, although they sometimes run into each other, are generally quite distinct:—

"1st. General dropsy, which is often accompanied by swelling and sloughing, or suppuration of the parotid and other glands, and occasionally by suffocative œdema of the glottis.

"2d. A diarrhœa or dysentery, which is usually dependent upon inflammation and ulceration of the ileum and cœcum, and is frequently fatal.

"1st. The *dropsical affection*, which we have seen in several cases, after severe attacks of fever, is scarcely referred to by authors who have written on the fever. It seems to bear the same relation to this fever that it does to scarlatina, and is accompanied with suppression of urine. We have known it to be fatal in four or five instances out of about three times that number of cases. In two of them death was caused by the extension of the disease to the glottis, the general state of the patients otherwise precluding any chance of benefit from tracheotomy. In one, death followed extensive sloughing of the parotids; in the others the patients were apparently exhausted by an obstinate diarrhœa, with which the dropsy was complicated.

"2d. *Chronic diarrhœa and dysentery*.—This most fatal sequel to ship fever comes on in most instances, apparently from some error in diet, in the form of a slight diarrhœa, which makes its appearance usually towards the close of convalescence and after the appetite is pretty fully established. If not arrested in this stage, it commonly goes on to a fatal issue, although we have seen a few recoveries after a very long continuance of the disease in an aggravated form. The patient has, at length, frequent discharges of a thin, yellowish, white, frothy liquid, of very fetid odor, which, as the disease advances, becomes sanious or purulent; the tongue is flabby and red, the pulse feeble and frequent, and there is great prostration. The pain is not always severe at first, although there may be considerable tenderness of the abdomen. In the latter stages it often becomes intolerable."

The important question—What are the pathological changes peculiar to ship fever? is answered in the dissertation before us, by presenting an account of all the lesions discovered after death in the cases that were examined. This account is, however, imperfect—in consequence of no intimation being given of the number of post-mortem examinations from which it is derived; and in consequence of its furnishing no exact specification of the relative frequency of the several lesions described. We present it to our readers in the words of the author:—

"*Lesions after death during the acute stage*.—These consist, as in other fatal exanthems, chiefly of congestions of the various organs, especially of the membranes of the brain, and the parenchyma of the lungs. The bronchial tubes are often found much obstructed with frothy and tenacious mucus. The blood

in the heart and great vessels *was noticed* to be peculiarly dark, fluid, and sisy; its clot large, loose, and easily broken. The lining membrane of the stomach is *sometimes* seen to be reddened, and dotted with clustered points near its cardiac orifice, but this was not constant. In cases where the urine had been retained, the bladder showed marks of irritation. In the small intestine, the internal surface of the ileum sometimes presented traces of inflammation, but the pathological condition was *more generally* limited to a decided injection of this part for an extent of three feet or so from the ileo-cæcal valve (without disorganization); and no case was examined in which this was not observed to a certain extent, which varied with the duration of the disease. The same may be said of the large intestines also.

"It must be considered as established, that ulceration of the small intestines does not take place in the acute form of typhus; but that the diarrhoea, which happens as a sequel to it, depends upon ulceration, hypertrophy, or inflammation of the ileum, cæcum, or colon. Peyer's glands are *usually* unaffected in any form of ship fever.

"One important symptom which occurs in some of the graver cases, we have not seen mentioned in any treatise. It is, a remarkable retention of urine. At the same time, there is no suppression, but rather an increased secretion; the catheter procuring sometimes from three to four pints daily. It is an unfavourable sign, and occurs mostly in those cases where the nervous system is a good deal affected.

"Another characteristic of this fever is the great indifference which the patient manifests in regard to the issue of the disease in his own case and in those about him—an indifference which is entirely distinct from delirium, and not at all dependent upon it.

"Tympanitis occurs oftener than is usually supposed; and although the gravamen of the fever is usually upon the brain and the nervous system, yet there are very few cases in which the abdomen is not more or less disturbed."

We proceed to notice the treatment which Dr. Clark found most successful in arresting the disease, and its sequelæ.

The first and all-important measure is to secure the perfect cleanliness of the person and clothing of the patient, as well as of his apartment and bedding, and the freest ventilation of the latter. In other words, to remove the patient from the influence of the inducing cause of the fever.

After clearing the digestive canal, the camphor mixture, with spirits of nitre, or the liquor ammoniæ acetatis, were given during the day, and when there was any restlessness, a full dose of Dover's powder at night. Demulcent drinks to satisfy thirst. If the bowels were not otherwise moved, a dose of oil or magnesia was administered, once in two or three days. If there was delirium, accompanied by a hard pulse, the fever mixture of Dr. Stokes was substituted for the other. Ice water was applied to the head, and sinapisms to the nucha, ankles, or abdomen. If the pulse was depressed, brandy or wine were administered in free doses until the delirium subsided. A blister to the back of the neck proved almost a specific in many such cases. Delirium, sometimes of a very violent character, was present in many cases which ultimately recovered. There was nothing from which the patients derived more comfort than frequent sponging of the trunk and limbs during the height of the fever.

"Local congestions about the chest frequently occurred from the exposure of patients on their way to the hospitals, or during the disembarkation, at an inclement season. They were treated mostly by external applications, such as epispastics, dry cuppings, &c. In some cases the antimonial treatment, combined with local bleeding, was found to be advantageous. But even in these cases, which were complicated with severe pneumonia or bronchitis, it was often necessary to continue the stimulants at the same time."

Bleeding, general or local, was seldom thought advisable in uncomplicated cases. In the few cases in which it was resorted to, leeches or cups were always preferred. Dry cupping often seemed to be of the greatest service in instances where the loss of even the smallest quantity of blood was contraindicated.

The chief reliance of the physician, in a very large proportion of all the cases of ship fever, must be upon the administration of direct stimulants. Wine

or brandy—the latter of which Dr. Clark prefers in hospital practice—must be given, often in the most liberal quantities, measuring them only by their effects. The most furious delirium will often be subdued by free draughts of wine or brandy and water, and in so short a space of time that the effect seems almost magical. Dr. Clark's ordinary dose of brandy was about half an ounce to an ounce, repeated usually every three or four hours.

Camphor, when the nervous system is much disturbed, may be given with advantage, in doses of from five to fifteen grains.

“Quinine is most useful after the acme of the febrile symptoms is passed, and will be found to be beneficial in preventing the dropsical sequence of the fever.”

Purgatives are to be used in all cases with the utmost caution. A moderate use of calomel may sometimes be required during convalescence, but castor oil is better for common use.

“Some subjects were brought into the hospital in an almost moribund condition, and unable to swallow. In these cases, stimulating injections were administered (per anum). Dry heat, by means of hot flannels, bricks, &c., seemed to be of great service in aiding in the restoration of the enfeebled circulation, and some patients recovered who really seemed, when they first arrived, to be in a desperate condition.

“*Anodynes*.—Opium, in the form of Dover's powder, was almost universally preferred as an anodyne, excepting during the secondary diarrhoea, when it seemed to irritate the bowels. It was given a great deal, and almost invariably with good effect. It is much better borne during the delirium of typhus than of typhoid fever. Its sedative effects in most cases were quite direct, and very seldom preceded by any period of excitement. Its use is of course improper, where there is any tendency to coma.

“*Sulphuric Ether*.—This was used by inhalation in a few cases, with very good effect” and, “it may become, eventually, a most valuable remedy in the delirium and restlessness of fever, when narcotics would be counter-indicated.”

“*Anti-septic Enemas* are sometimes useful, especially if there is much puffing up of the abdomen from flatus; and the common brewer's or baker's yeast is a convenient article for this purpose.”

For the diarrhoea, which occurs as a sequel of ship fever, Dr. Clark employed a solution of nitrate of silver as an injection, with the application of counter-stimulants to the abdomen. The nitrate was administered with a glass syringe, to which he sometimes attached Mr. O'Beirne's tube, introducing thus the solution directly into the colon, and throwing it up from that point. In some cases, this treatment was apparently beneficial, in many others no treatment availed. Dr. Clark believes it promises as much as any other, when combined with the usual opiate remedies.

During convalescence from ship fever, Dr. C. remarks, a slight indiscretion in diet is sure to cause a relapse, or to bring on the fatal diarrhoea. At first, light farinaceous food, with porridge, rice, &c., in small quantities at a time, are the best articles. Broths and soups are not well borne for a long time after recovery has commenced, and their use should be delayed until the patient is able to take a little exercise about the house. Dr. C. directs as drink, chamomile tea for breakfast and supper, and a little soda water or brandy and water for dinner.

“If the weather is suitable, the patient should be allowed to exercise in the open air as soon as he is able to walk; for nothing in our experience so rapidly restores the exhausted energies of a convalescent from ship fever.”

As a sensible, practical dissertation upon the leading particulars connected with the etiology, symptomatology, and treatment of ship fever, the prize Essay of Dr. Clarke will be read with interest and profit. What facts the author has adduced in respect to the pathology of the disease are in themselves valuable—they are, however, less so than he might have rendered them by employing more precision in their detail. So far as they go they would appear to favour the doctrine of the specific difference between ship, or typhus, and typhoid fevers; and yet we suspect that the advocates of this doctrine would not be inclined to appeal to the dissertation of Dr. Clark for very positive, or at least conclusive evidence of its truth.

D. F. C.

ART. XXVI.—*Dietetical and Medical Hydrology. A Treatise on Baths; including Cold, Sea, Warm, Hot, Vapour, Gas, and Mud Baths: also, on the Watery Regimen, Hydropathy, and Pulmonary Inhalation; with a description of Bathing in Ancient and Modern times.* BY JOHN BELL, M. D., etc. etc. Philadelphia, Barrington & Haswell, 1850: 12mo. pp. 658.

WHEN we consider the importance of bathing in its hygienic as well as therapeutic relations—as a means for the promotion and maintenance of health, and for the cure of disease—we cannot but deem it somewhat strange that there should exist so few treatises in the English language on the subject—no one, in fact, until the appearance of that of Dr. Bell in 1831, of which the present may be considered as an extended and improved edition, that presents a comprehensive view of the effects upon the human body of the several varieties of baths, “their resemblances and contrasts, and their successive and alternate uses.”

As simple a matter as bathing may appear, and as harmless a fluid as the water—cold, warm or tepid—of which the bath is composed—there are few things in the use of which more frequent errors are committed—leading often to a serious impairment of health, if not to the production of actual disease. Even in the application of baths to the cure of disease, there is reason to fear that the profession generally are not fully informed of the whole extent of their therapeutical powers, the particular pathological conditions to which the several baths are applicable, or the stage and circumstances of the disease to which they are individually adapted.

On every point connected with the hygienic and therapeutical employment of bathing, the treatise of Dr. Bell will be found to contain ample instruction, based upon correct views of physiology and pathology, and of the effects produced by the application of water, at different temperatures, to the body under the varying circumstances of health and disease: the correctness of the principles established upon scientific data being proved by a reference to the recorded experience of cotermporaneous physicians, as well as of those of former periods.

Dr. Bell addresses himself to the unprofessional as well as to the professional reader. In its hygienic application, bathing is alike important to every one, and hence it is essential that the public generally should be informed as to the manner in which they may be enabled to derive from it all the advantages it is calculated, in this respect, to afford. Even in their use as a remedial agent, there exist so many popular errors and prejudices in relation to baths that often stand in the way of their full and effectual employment by the physician, that to attempt the removal of these by showing to the general reader, the experience of the profession as to their propriety and curative powers, may not be without good results.

Dr. Bell, however, warns his readers, that the portions of his treatise devoted “to the therapeutical application of baths, or their employment in the cure of diseases” are intended “to be exclusively appropriated by his medical brethren.”

“High,” he remarks, “as his estimate is of the varied uses of water for the wants of the animal economy, he does not believe that even this simple fluid can be employed with safety and advantage as a *remedy*, except by persons properly qualified to practice medicine. If any advantage could arise to those who are not of the profession, from a perusal of the medical portions of the volume, it would be, to learn that the practice recommended by their medical adviser, to which they might object on account of its supposed novelty and doubtful character—such as, for example, the use of the cold bath in scarlet fever—is supported by large and safe precedent.”

We believe that all who attentively study the treatise of Dr. Bell, will confess that, while they have been interested by its subjects, and the manner in which these are treated by the author, they have also derived no little instruction on “the operation and effects of the different kinds of baths on the animal economy, as well in its healthy as in its diseased state.” It would be a very

equivocal recommendation to denominate the work the best systematic treatise on bathing in the English language, for, as we have already remarked, it is the only one of that description accessible to the great mass of American physicians, to whose patronage we strongly commend it.

D. F. C.

ART. XXVII.—*The History, Diagnosis, and Treatment of Edematous Laryngitis.*
By ELISHA BARTLETT, M. D., Professor of the Theory and Practice of Medicine in the University of Louisville. Louisville, 1850: 8vo. pp. 34.

THIS is a well drawn up and highly instructive memoir on the pathology, diagnosis, and treatment of a disease of more frequent occurrence than is perhaps generally supposed—one which always runs its course with great rapidity, and terminates very generally in death, unless arrested by prompt and active treatment.

The author was induced to prepare the present treatise, he informs us, in consequence of there being no full and complete history of Edematous Laryngitis generally accessible to American physicians; the meagre accounts of the disease contained in the standard works on the practice of medicine, both English and American, being inadequate to furnish that knowledge in relation to it which is calculated to lead to an accurate diagnosis and a successful treatment.

Dr. Bartlett has derived the materials for the preparation of his memoir from the most reliable sources, and has employed them in a manner so judicious that he cannot fail to receive the thanks of those for whose instruction the memoir is designed. He claims no originality in regard to any of the views advanced, either pathological or therapeutical, nor has he added any observations of his own, confirmatory or corrective, of those of the authorities he adduces; nevertheless, in the humble task he has undertaken, of compiling, from the valuable materials furnished by others, a practical treatise that may reach thousands who have no access to the information in relation to the formidable disease of which it treats, contained in the writings of the continental physicians, he may be the means of diffusing information that shall cause the saving of many valuable lives.

D. F. C.

ART. XXVIII.—*The Life and Correspondence of ANDREW COMBE, M.D., &c. &c.*
By GEORGE COMBE. Res non verba quæso. Philadelphia. A. Hart, late Carey & Hart, 1850: 12mo. pp. 428.

FEW authors, whose writings are chiefly confined to subjects relating to physiology and special hygiene, have become so extensively known to persons not of the medical profession as the subject of the present memoir. Among the thousands whom he has interested and instructed by his works, few will be found, now that his active mind and ready pen have been arrested by death, without the desire to learn something of "the home life, the daily labours, and the character of one who has devoted himself to the improvement of his fellow-men, and, if happily it may be, also, as an exemplar, in his own person, of the truth of the precepts which he inculcates."

This natural and rational desire will be fully gratified by the life and correspondence of Dr. Combe, written and arranged by his brother. The Biography is in itself full of instruction; in the words of the American editor—"it exhibits a man whose childhood was passed in a state neither favourable to health, nor to the best culture of the affections, and whose manhood was ushered in by alarming disease, which, although often remitting in its violence, was ever his companion until the day of his death. Yet, notwithstanding these adverse circumstances, his mind was gradually developed into a state of maturity and even vigor, which enabled him, under the impelling power of a resolute will and high conscientiousness, to be a teacher and a guide to his

fellow-creatures, in the means of preserving their health and cultivating their intellect, conjointly with the better and kindlier sentiments of their nature.”

The letters addressed by Dr. Combe to his friends and relatives, either entire, or copious extracts from them, are interwoven with the thread of his biography. Many of these letters were written by him during his absence from home—while seeking, in change of climate and of scene, to arrest the course of the disease—consumption—with which he struggled for upwards of twenty-seven years. His correspondence embraces a great variety of important topics—The effects of different climates on the invalid who is threatened with or actually labouring under pulmonary consumption, with minute directions for his conduct, both at home and abroad—Advice and precepts on the ever important points of education, national, collegiate, and private—with reference to actual wants and adaptation. Great questions of morals and ethics, and the minor, but still useful ones of personal deportment and thrift, are brought before the reader in his letters to friends, and occasionally in the more formal replies to the interrogations proposed to him. Not less pertinent and instructive are his remarks and precautions on Public Hygiene, and on the internal economy and government of lunatic asylums.

In the spring of 1847 Dr. Combe visited America. His account of this visit is given in a letter to Sir James Clark. He appears to have been rather favourably impressed by what little he saw of the people and institutions of the United States—but his stay was too short, and his opportunities of studying the features of the country, the nature of its institutions, and the character of its varied population, were too limited to enable him to form any just estimate of either.

In America, the writings of Dr. Combe have had a wide circulation, and we anticipate that his life and correspondence will be equally popular. No one can read them without feeling interested, or without deriving from their perusal profitable instruction.

D. F. C.

ART. XXIX.—*Remarks on the Comparative Value of the Different Anæsthetic Agents.* By GEORGE HAYWARD, M. D., one of the Surgeons to the Massachusetts General Hospital. Boston, 1850: pp. 11. 8vo.

In this pamphlet, the author briefly gives the results of his experience relative to the particular advantages and disadvantages of sulphuric ether, chloroform, and chloric ether as anæsthetic agents. Dr. Hayward was one of the very first to operate upon a patient rendered insensible by the inhalation of sulphuric ether, and the numerous opportunities he has since had of witnessing the effects of this and the two other named anæsthetic agents, and his matured judgment, entitle his opinions to every consideration.

Dr. Hayward disapproves of all the various apparatus which have been employed for the administration of anæsthetics, and prefers for the purpose a bell-shaped sponge of fine texture, large enough to cover the nose and mouth. This method was first adopted at the Massachusetts General Hospital, and is now in general use. The ether should be of the purest kind and administered gradually, and mixed with a sufficient quantity of atmospheric air, to prevent the respiration being laborious or painful. “The irritability of the parts,” Dr. Hayward says, “with which the ether comes in contact is by degrees overcome, and then the sponge may be applied directly to the face, and if necessary compressed in some measure so as to exclude to a greater degree the atmospheric air. When the desired effect is produced, which is usually in from three to five minutes, the patient has no control over the voluntary muscles; he cannot speak; he cannot open his eyes when directed to do so; his muscles become completely relaxed, and the pulse, which at the beginning of the inhalation is frequent and often rises during the process to one hundred and forty beats in a minute or more, becomes slower, and I have very often known it to fall to sixty. The patient is then insensible and unconscious, and the surgeon may begin his operation with great confidence that he

will inflict no suffering. The sponge should then be removed, and reapplied from time to time as circumstances may require. If the ether is not pure, longer time is necessary to produce the desired effect; the brain and nervous system are more excited, and the patient is occasionally violent for a time and with difficulty controlled.

"Before using the ether the sponge should be dipped in warm water, and then strongly compressed, leaving it slightly damp. The evaporation seems to go on better in this way, than when a sponge is used that has not been previously moistened. In the first instance, the ether should be poured on the inside of the sponge; about two ounces is enough; when more is required, it should be applied to the outside, as it is best not to remove the sponge from the face."

Sulphuric ether used in this way Dr. Hayward confidently believes to be "perfectly safe, and will in almost every instance produce the desired effect. I have administered it to persons of all ages, of every variety of constitution, and in almost every state of the system, and I have never known in a single instance a fatal or alarming result. I have given it to infants of seven weeks old, and to individuals of seventy-five years with entire success. I have administered it to persons suffering under chronic pulmonary disease, not only without injury, but in some cases with decided benefit. It is well known that it often gives relief in catarrhal affections of the lungs and in paroxysms of asthma. In fact, I hardly know a state of the system in which I should be deterred from using it, if I were called upon to perform a surgical operation."

The *advantages* of sulphuric ether are, according to Dr. Hayward, "its entire safety, the ease with which it is administered, and the slight inconvenience which follows its administration. I have already stated that I have never known its inhalation followed by a fatal or alarming effect, and there is reason to doubt whether death has in a single instance been produced by it, when it has been properly administered. One patient is said to have lost his life by its inhalation at the hospital in Auxerre, in France. This took place in August, 1847. The details of the case are not given with such minuteness as to enable any one to form a satisfactory opinion. It occurred, however, not long after the discovery; before the best mode of exhibiting it was adopted, and the *post-mortem* appearances indicated, as far as any opinion could be formed from them, that death was caused by asphyxia. In a careful examination of some of the leading medical journals of Europe and this country, published during the last three years, I have not been able to find another case in which life was destroyed by the inhalation of sulphuric ether, and there is reason to believe, as I have already intimated, that death would not have taken place in this instance, if the lungs had been abundantly supplied with atmospheric air. It is only wonderful that an agent of such power, used as it often has been in the most reckless manner, by unskilful and ignorant persons, should not have caused far more disastrous results, than any that have hitherto been made known. It teaches us that though it should be used with caution and confided only to skilful hands, the dangers from its use are far less than our preconceived opinions had led us to believe.

"There are no ill consequences from its use. If it be breathed only for a short time, its effects usually pass off in a few minutes. I have never known them to continue for more than an hour; and in this case the patient had been kept under its influence for forty-five minutes. Nausea and vomiting are not frequent, unless it is inhaled soon after food has been taken. I have not seen convulsions follow its exhibition, nor any delirium, except a slight and transitory kind, such as arises from intoxicating liquors. I confess that I was much surprised to learn, by carefully watching its effects, to what a small extent and for how short a time it disturbed the functions of the nervous system, and how rare it was to find headache among the consequences of its inhalation.

"If, however, the state of narcotism should continue longer than is necessary for the purposes for which it was produced, the means that seem to me the most likely to remove it, are the dashing of cold water in the face; the application of strong stimulants, as the carbonate of ammonia to the nose; and as soon as the patient can swallow, the administration of a small quantity of hot spirit and water. The object is to increase the action of the heart, so that the blood

may circulate more rapidly through the lungs, and thus be enabled to part with the vapour of the ether that is mixed with it. When narcotism arises from any noxious substance taken into the stomach, we adopt means to empty that organ as soon as possible by the stomach-pump or an emetic. The principle of the treatment in the two cases is the same; the object being in both to remove the cause of the peculiar state of the system under which the patient is labouring.

"The only objections of which I am aware to sulphuric ether as an anæsthetic agent, are its pungent odour, which is offensive to some persons, and the no inconsiderable degree of irritation which its inhalation occasionally produces in the air passages. This irritation, I am confident, may be in great measure prevented by proper attention to the mode of its exhibition and the quality of the article used. Admitting these objections to be as great as they have been said to be by those who have urged them with the most earnestness, they do not in my opinion counterbalance the advantages; and I have no hesitation in saying that I should give it the preference over any other article with which I am acquainted, that is used for the purpose of producing insensibility."

The only *advantages* which *chloroform* possesses over sulphuric ether, Dr. H. states, "are that it is more agreeable to inhale than ether, and that a less quantity of it answers the purpose. On the other hand, it cannot be denied that fatal effects have followed its inhalation in several instances, even when administered by the most judicious hands; that in some cases convulsions have been produced, and in others a great disturbance of the brain, causing delirium. In some persons, this affection of the mind has continued for several weeks.

"There are other objections of a minor character. Chloroform is of an acrid, caustic nature, and if it come in contact with the skin, unless it be protected by some oily substance, severe excoriation is the consequence. Its administration is generally followed by vomiting and headache, which continues for several hours, attended by a great degree of restlessness and want of sleep. Several cases have come under my care, in which the brain and nervous system have been affected to an alarming extent; though, in every instance, it was said that small quantity only of chloroform was administered for the purpose of performing some operation on the teeth.

"An individual in this vicinity was thrown into violent convulsions, which continued for three or four days, during all which time she was in a state of complete insensibility, from the inhalation of the vapour of a few drops of chloroform administered by a careful and judicious physician. It would be easy to multiply examples of this kind; but it is not necessary, for there is a stronger ground on which we can rest our opposition to the use of chloroform, that is, its danger to life. This, it is well known, has already been in several instances destroyed by it. If it can be shown that it has caused the death of a single individual, when properly administered, we cannot fail to have our misgivings of the safety of its exhibition, though it may have been inhaled in almost numberless cases without any ill effect.

"I am satisfied that there are already on record at least twenty well-authenticated cases of death from the inhalation of chloroform; and I know not how a conscientious man, knowing this fact, can willingly take the responsibility and expose his patient to this fearful result. One of the conclusions to which M. Malgaigne arrives, in his report on chloroform, to the Academy of Medicine of Paris, cannot be too strongly impressed on the minds of those who feel inclined to use it. 'Chloroform possesses a toxic action peculiar to itself, which has been taken advantage of in medicine by arresting it at the period of insensibility, which action, however, may, by being too much prolonged, cause immediate death.' The danger is that we cannot always know the precise time to arrest it, and that the fatal blow may be struck before we make the attempt. In other words, chloroform is a poison, and the insensibility which it produces is only the first stage of its poisonous action."

The chloric ether consists of one part of pure chloroform, with nine parts of alcohol. This, "it cannot be denied," says Dr. H. "derives its power of producing insensibility from the chloroform it contains; and it is difficult to understand how the addition of alcohol can deprive it of its dangerous proper-

ties, when it is well known that the mixture of this substance with sulphuric ether renders it in great measure unfit for inhalation.

"The advantages which it is said to possess are, that its odour is less pungent and disagreeable than that of sulphuric ether, and that it can be inhaled with little or no inconvenience. At the same time, it must be admitted that it is necessary to use as much chloric as sulphuric ether, and to continue the inhalation for as long a time to produce the desired effect.

"The disadvantages are, that when it comes in contact with the unprotected skin it acts upon it in the same manner as chloroform. From this cause a patient suffered several months at the hospital, and I believe much more severely than if he had undergone the operation without the ether. I am confident, too, that it is more apt to produce vomiting, and a greater disturbance of the brain and nervous system, causing headache, restlessness and vigilance, which not unfrequently continue for many hours after its exhibition. Perhaps these last symptoms may be owing to the great amount of alcohol it contains.

"I cannot, I confess, divest myself of the belief that chloric ether is an unsafe anæsthetic agent, when I consider that it is simply chloroform diluted with alcohol. It is true, that as far as we know, no fatal effects have hitherto followed its inhalation; but it is also true, that it has as yet been used to a very limited extent, and in all the cases in which it has been exhibited that have come to my knowledge, it has been managed with great caution and judgment. But I fear that if it be used with the same freedom that sulphuric ether is, we shall soon have to record some very different results. We cannot feel confident that it will always be confided to skilful hands only, nor by any means certain that death, when not looked for, may not follow its exhibition."

If all surgeons would narrate as candidly as Dr. Hayward has done, the results of their experience, with different anæsthetic agents, we should soon be able to form a just estimate of their value.

ART. XXX.—*Physic and Physicians. The Annual Address delivered before the Alabama State Medical Association.* By WILLIAM O. BALDWIN, M.D. Montgomery, 1850: pp. 43, 8vo.

THE first portion of this Address is occupied in refuting the statement so frequently made that the profession has degenerated, and the second in deploring the ravages of quackery within and without the profession. The two are scarcely consistent with each other. The author has, like many others, confounded the improvement of medical science, which nobody contests, with the improvement of medical practitioners, which nobody has demonstrated. He says: "whoever observes the character and success of the profession, as organized and operative in our day, can hardly avoid the conclusion that any given number of young men who now graduate in the United States, are better qualified than the same number were in any preceding year."

That is not, we respectfully submit, the question at issue. It is most cheerfully conceded that in those schools which, twenty years ago, sent out their three or four hundred graduates annually, the graduates of every subsequent year have progressively improved, partly in consequence of their previous education being better, and partly because the medical courses have been perfected. But what shall we say of a large portion of the six or eight hundred annual graduates who are now poured out by more recently established institutions? We are persuaded that in average attainments they do not reach the standard of graduates of twenty years since; and, what is worse, that after entering the profession they are much more apt to remain stationary. For while in the olden time the student was at least impressed with the dignity, excellence, and sacredness of his calling, the class of modern students to which we have allusion become physicians with such motives as ought to lead them to be blacksmiths or carpenters, or members of some fraternity in which they might be really useful to mankind. But they take up physic as a trade, they are taught by traders in diplomas, and they practise in the true spirit of

tradesmen. And as for improvement—they vote all discoveries a humbug, and study a bore. Yet these persons, physicians in name, and by virtue of a parchment title, claim and assert an equality of rank with the well-educated, the high-minded, the studious, and progressive members of the profession. They form a part of the same body politic, and by their character and conduct determine its estimation in the world. Twenty years ago nearly all graduates of medical schools were sure to possess a respectable degree of knowledge and skill; but now, although the graduates of a certain number of schools have higher attainments than ever, the remainder occupy the very lowest point in the scale, which begins at the zero of ignorance and ends at the climax of wisdom.

We repeat, then, that owing to the very large proportion of incompetent persons annually admitted into the ranks of the profession, it must, as a body, be held to have degenerated; while at the same time the number of accomplished graduates is every year increasing. Thus it happens that the diploma alone is no evidence of competency: its source decides its value. Coming from one quarter it affords presumption of its owner's ignorance; coming from another source it gives assurance that its possessor has at least had the opportunity of becoming a competent physician. It had perhaps been well for the author of this Address to consider these things before asserting "that much of what has been said recently in relation to our Medical Schools, are untruths."

We find little room for dissent from the author's remarks upon quackery, some of which are very much to the point. For instance: "*Persons*, in this strange world, frequently have more power than either *truth* or *fact*; and consequently, the legitimate instrumentality of a physician is oftener interrupted by the unwise and unjust intermeddling of others, than by any other agencies." This we conceive to be the kernel of the whole subject. It is not by reason that medicine can be assailed; the raging vice of the times, the itch of people to give opinions upon all possible subjects, and most especially upon those they know nothing about, that is the secret of quackery in politics and religion, as well as in medicine.

"Men," says Dr. Baldwin, "whose opinions or judgment we would value highly on any of the ordinary affairs of life; men who are distinguished for their good sense and philanthropy, and who are deeply learned in all that pertains to their own calling, are generally profoundly ignorant of all the requisites necessary to a just and enlightened view of ours. . . . Yet it is true that such men often lead public opinion in matters directly affecting the science of medicine."

A notable instance happens to present itself while we are writing. In an article on "authority in matters of opinion," contained in the Edinburgh Review for April, 1850, the writer says that homœopathy is plausible. The reason is a curious one. "The homœopathist," he remarks, "tells us that much of what we call disease is, in fact, a curative process. That the acceleration of the pulse, for instance, in fever, is an effort of nature to escape from a mischievous influence," &c. Think of a doctrine being attributed to homœopathy which has been that of the whole medical world, with trifling exceptions, from the time of Hippocrates to the present day! And yet such blunders, and worse, are made perpetually by the would-be critics of our science.

The Address before us contains many sound views respecting the various medical impostures which are in fashion just now, and very properly cautions those who heard it against attaching to them undue importance, or supposing that they can exert any permanent influence on the condition and prospects of the medical profession. Such arguments are undoubtedly useful; but they would be quite unnecessary if our physicians were as familiar with the history of medicine as they would become under a different system of education from that which now prevails.

A. S.

ART. XXXI.—*Production of Vital Force.* By EDWARD JARVIS, M.D. 8vo. pp. 77 : Boston, 1849.

THIS paper was delivered as an Address before the Massachusetts Medical Society, and composes nearly the whole of the first number of the eighth volume of their published proceedings, at their annual meeting in 1849. It will be read with much interest by all who give attention to vital statistics, since it demonstrates facts of the highest importance to the welfare of individuals and communities.

The application of accurate arithmetical tests to show the proportions of sickness and mortality experienced by persons of different classes and pursuits, at different ages, has opened the eyes of many of the most intelligent, and invested the subject of vital statistics with great consequence, although not yet with all the importance it deserves. We say this because we find other matters of far less consequence to human welfare—those, for example, connected with pecuniary affairs, receiving much more attention from individuals and communities, and absorbing much more time and attention from legislative bodies. Such labours as the one now before us will do a great deal towards enlightening many who have hitherto been more or less blind to the evils besetting humanity in its different aspects, and who have not been aware of how much may be done to lessen the amount of sickness, alleviate suffering, and prolong life.

Dr. Jarvis describes the human constitution as made up of the aggregation of all the physical powers, the original organization, the united energies of the nutritive, respiratory, cutaneous, locomotive, and nervous actions, and the predominance of the vital over the chemical affinities, co-operative in the production of *vital force*. These make up the *constitution* of man, or capacity for labour and endurance, as well as power of resisting injurious influences. This quantum of vital force he regards as the *capital of life*, with which human beings operate in all their works and actions, whether of utility or pleasure.

"Some few persons," he observes, "have only vital force sufficient to barely sustain life. They can digest their food, and perform the other functions necessary for the replenishment of the exhausted powers, and no more. They can only keep their vital machines in operation. But most persons have more than this. After supplying their natural wants and raising the power of the machine to its highest healthy point; then deducting all the vital force necessary for these from the whole constitutional force, there is in them a surplus of energy left to be disposed of otherwise; and this may be expended at their own will, in action of the muscles or of the brain, for profit or for pleasure." This surplus energy is regarded as the *income of life*, which may be expended daily and yet leave the capital unimpaired. The daily expenditure must, however, be limited to the quantity of vital force generated by each day's nutrition and each night's sleep.

That every error in life produces its proportionate diminution of vital force, is an axiom generally admitted. "The capital of life," observes Dr. J., "and the capital in trade are both subject to somewhat similar conditions; and both are diminished by every error. As with the merchant, every disadvantageous investment, every neglect of the means of due profit, every expense in the conduct of business beyond what is necessary for its success, and every other expenditure beyond the income, lessen the amount of his pecuniary capital; so, every neglect of the due means of recuperating life, every failure of proper food, in time or in quantity, every tax upon the digestive organs beyond what the nutrition of the body requires, every inhalation of weakened or vitiated air, every excess of labour by muscle or by brain, every privation of sleep, all expenditure of power beyond the average daily strength—each one of these, whether great or small, diminishes, in its proportionate degree, the vital capital.

The effects of errors in living are regarded as accumulative, perhaps imperceptible at first, but in the end certainly displayed with greater or less gravity. These are glanced at as they appear in the too intense student, epi-

cure, overtaken man of business and operative, the dwellers in too-crowded apartments, buildings, or localities, etc. etc. "There is in man," says Dr. J., "a large vital capital, to be expended, a large power of endurance that may be exhausted in wrong management; and, therefore, he does not regard his errors, nor perceive his losses. But all undue expenditure is none the less a loss, and all endurance is weakening; and the day of reckoning and suffering, sooner or later, inevitably comes. The consequences grow out of and hang upon the causes, and they cannot be separated.

"It is plain, then, that the separation of perfect health from acknowledged sickness is not by a distinct and narrow line, on one side of which all is soundness, and on the other, indisputable disease. But between perfect health—as good as the original constitution admits—and recognized disease, there is a wide space, a sort of neutral or disputed ground, occupied in part by both, and exclusively claimed by neither.

"The result of all this variety of organization, development, and self-management is, that between the strongest and the weakest man, both in the enjoyment of their average, or what they call good health, there is an interval almost as wide as that between life and death; and, in this wide space, there is every grade of power in which men live and enjoy all that they suppose is allotted to them. Whatever the grade may be in which any one stands, that is his own standard of health, in which he hopes to sustain himself, and thinks himself sick only when he falls below it."

The depressing causes operating in reducing the standard of health often continue their wasting work until they constitute predisposing causes to disease, or even some positive morbid change. And these ills flowing from the errors in life adverted to, are observed most frequently among the poorer classes, exposed to privations and other evils, among the weak and foolish who mismanage themselves, and the wicked who abuse themselves. Villermé, the eminent French statistician, observes that, in some parts of France, the mortality among the indigent is just double that of the wealthy, and that taking together the whole French population, human life is protracted twelve years and a half among the wealthy beyond its duration among the poor. "Sickness and mortality," observes Dr. Jarvis, "seem to go hand in hand with poverty. The want of intelligence and skill in self-management accompany the want of pecuniary means to procure the comforts and even the necessities of life. Poverty refers to vitality and to bodily and mental health, as well as to estate."

Some of the most striking and startling results are furnished in the reports of the British Registrar-General, of the different proportions of mortality observed in different classes. From classifications made in different towns and places, according to occupations and domestic conditions, it appears that in the families of the prosperous, 20 per cent., and in the families of the poor, 50 per cent. of the deaths were under 5 years of age. Of the prosperous 28 per cent., and of the poor 66 per cent. died under 40. Among the prosperous 46 per cent., and among the poor only 8 per cent. survived their 60th year.

In considering the causes of the differences of vitality, Dr. Jarvis thinks much depends upon difference of organization—much upon development—but most of all upon self-management. The last, he says, is certainly within the control of man himself; the second within the control of his parents; and the first, more under the control of the world than persons are generally willing to admit.

"There is," he very justly remarks, "a general ignorance of the laws of vitality. Men do not understand the connection between their conduct and vital force; and they feel but little responsibility for the maintenance of health. They lay their plans and carry on their operations without much regard to the conditions of their existence. Life and its interests are not always paramount considerations; but they are made subordinate to matters of inferior importance. They are sacrificed or made to yield to common conveniences and concerns: a man postpones his regular meal, or perhaps goes without it, for want of time to attend to it; or, he eats too much, in order to gratify his appetite, or perhaps

to please his friends; he exposes himself to inclement weather—cold, storms, and heat—in pursuit of pecuniary profit; he fashions and wears his clothing, not according to the necessities of his temperature, but according to the varying taste of the world; he works late at night, or early in the morning, and expends in the day more vital force than the night brings back to him; or, he devotes some of the hours needed for sleep to pleasure, or to the calls of charity.

“In the management of the organs and powers, the question, generally, is not—What does life require for the development and maintenance of its fullest power? but—What will it bear without extinction? Doubtful questions are determined against life, which must bear the risk of the loss.”

Dr. Jarvis makes many judicious remarks in relation to the different care bestowed upon measures relating to the preservation of life and health, and those connected with property, and views the influence of parentage on the constitution. Upon this last topic he observes that “hereditary strength or weakness must be traced back to the marriage relation for its cause. There it may not be possible to interfere. It is apparent that we cannot apply some of the means for the improvement of the human race that we do for the improvement of the lower animals and vegetables, by the selection of parentage.

“The sensibilities of society would revolt at the thought that only the healthy should marry. Mankind love to cherish some peculiarly holy and delicate notions in respect to marriage; the tenderest feelings of the heart, and the uncalculating affections, seem exclusively to be considered. People seem to marry for their own happiness alone, and cast no look beyond themselves. Yet other considerations are sometimes admitted. None can be blind to the future fact, that from this institution another generation shall spring; and, although these future events are forbidden subjects of discussion with those who are most interested, and even all allusion to them in their presence is studiously avoided, yet, in reference to pecuniary matters, the probability of issue is occasionally considered. Some cautious women, in order to prevent the loss of their own estates, in the chances of their prospective husbands’ affairs, secure it before marriage to themselves and their issue. And some prudent persons, before contracting marriage, would consider it unwise to neglect to ascertain whether the proposed partner had merely a life right in an estate in possession, or whether the estate was held in fee simple and would descend to the possessor’s children. And so men and women do not hesitate to look at the probability of offspring when money is concerned, and to provide in the advance for the security and sufficiency of their estates.

“If the world could be convinced that health and strength descend from parents to children as certainly as property, and that the laws of man cannot guarantee to the future offspring the possession of estates that now belong to the contracting and marrying parties as effectually as the laws of nature guarantee that their organization, and the physical, mental, and moral qualities that grow out of it shall descend to their issue; if this law of hereditary life could be as generally understood as the law of hereditary property, then men and women, in their matrimonial selections, would take into consideration the constitution and health of their proposed partners. And those who now think it wise to ascertain whether wealth or poverty shall be entailed upon their children, would think it still more wise to ascertain whether a sound constitution, or insanity, epilepsy, consumption, scrofula, rheumatism, or any other disease shall be their children’s inheritance. Certainly no prudent man or woman can know that any one of these diseases, or that defect of organization which creates a susceptibility of any of them, belongs to the proposed husband or wife, without shrinking from the connection that would entail it upon their own children.

“It is an essential element of our highest benevolence and cultivation to arrange all our plans of action in such a way that they will secure the greatest good, not only for the present time and for ourselves, but for the future and for all others that may be affected by them, however remotely. On this principle, wise and generous men and women, when they form their matrimonial plans, will look, not merely for those qualities of mind and heart that will give the

greatest present enjoyment to themselves, but for all those qualities that will secure the greatest and most permanent enjoyment to their children and their remotest posterity.

"For this purpose, it is necessary to learn, first, the law of hereditary descent, and, next, the facts in regard to the hereditary or acquired constitution, the present health, and the purity or impurity of the blood of those who are candidates for matrimony. When used for this object, the study of even 'endless genealogies' will be profitable; not for the mere purpose of finding a series of names that represent a succession of generations, nor of tracing out some root of external honor, but to determine through whose veins the blood has flown from even remote ancestors to the present generation.

"In this view, the *registration of births, marriages and deaths* becomes of great value, for it will show from whom any one is descended, what families have connected themselves with his family, who have contributed the elements of their life to the formation of his life, whether any taint has crept through any of these channels into his blood, and what fatal diseases have been in his family."

Dr. Jarvis thinks that the vital forces of human beings are susceptible of similar increase to what is observed in the vegetable kingdom and the inferior animals. The most forbidding fruits by careful cultivation have been changed into those of most delicious qualities, whilst animals have been so improved by judicious attention as to appear almost of a different species from the primitive stock. In regard to the prospects of improving the human family, and the number of ages it will require for mankind to attain to its fullest development and measures of vitality, Dr. Jarvis does not venture any rash conclusions: but nothing is more certain than that conspicuous beneficial changes will follow the adoption of all judicious measures resorted to for improving the physical condition of man, and lessening the amount of his sickness and suffering.

G. E.

ART. XXXII.—*Opening Address delivered before the Society of the Alumni of the Baltimore College of Dental Surgery, at the Second Annual Meeting, March 26th, 1850. By E. TOWNSEND, D. D. S.*

THE rank which dentistry has assumed within the last few years, as a branch of surgery, like the corresponding position of pharmacy as a department of medicine, is a strong proof of the advancement of scientific knowledge, and of the tendency which the scientific culture of any subject possesses of elevating those who pursue it zealously. What chemistry has done for the pharmaceutical profession, anatomy, physiology, and pathology have accomplished for that of dentistry; until both were linked with science, both were the chosen fields of charlatanism, and held in light esteem both by the public and by physicians. But now they have attained a form and dimensions which daily bring them closer to our own profession, and obtain for them, in our public convocations a recognition of their rank, which is all the more courteous that it is entirely just. It gives us pleasure, therefore, to witness the continued development of the organization under which the dentists of the United States have become a scientific body, and to receive such evidence of their being animated by a true and generous spirit as this address presents. Our readers may judge of the sound sense and high tone of this production, from the subjoined extracts. Except one or two historical errors in relation to the origin of medicine and surgery, it contains little that suggests unfavourable criticism, but much on the other hand which physicians, as well as dentists, might reflect on with advantage.

Speaking of association as a means of diffusing knowledge, the author makes these striking remarks:—

"It is in the nature of mind to impart *most* liberally its most valuable acquisitions, and to receive with an equally unselfish avidity all that the social commerce of intellect returns, just as light is transmitted and reflected from gem to

gem in multiplied brilliancy, and as the vivifying rays of solar heat flash from object to object, till an equilibrium of the blessings give repose to the distributive impulse. It is only the lower relishes of the animal appetites that can enjoy a solitary feast. The raptures of the higher intellectual, and of the nobler moral, faculties are all found in a generous munificence, which emulates the 'prodigality of heaven.' This is not only the natural religion, but it is also a natural necessity of the intellect, for by a paramount law of human education it is ordained that by *giving* we shall receive, and in teaching we shall learn. To seize, to hide, and hoard are the only means of accumulation which the lowest instincts know, and it is not given to the shut soul and cavern heart to comprehend the divine policy of those high natures which acquire only to bestow, enjoy only what they spend, and lay up their chiefest treasures by giving them away."

And, again, of the duty of publishing discoveries:—

"If you do make discoveries—if nature and education have made you great enough for that, be not mean enough to run away into the dark with it; skulk not out of good company to fatten on your good fortune, for recollect that you have borrowed as much from the liberality of others as your own genius will ever repay to the great world of science.

"If there be anything revealed to you, give it to the light, that others may interpret, and test, and prove it. Recollect that the apostles of science have all things in common, and if you meanly secrete a part of the wealth which belongs of right to the general stock, you deserve to be carried out of the profession, like Ananias, *feet foremost*."

That the operator does not make the surgeon is thus admirably illustrated:—

"Mechanical skill and expertness of manipulation do not make a dentist, though all operations absolutely depend upon dexterity of hand; for our profession is a science as well as an art. Like statuary, it involves taste as well as tact; like surgery, it involves knowledge, as well as skill; and like remedial science in general, it demands systematic knowledge broadly based in anatomical facts, physiological laws, and medicinal agents. The acquirement of our professional learning requires a scholar; its practice requires an artist; and its standing and social relations demand a gentleman."

We commend the following observations to those of our surgeons, who, like a certain eminent Frenchman who carried a case of instruments to a medical consultation, seem to think that "*il y a toujours quelque chose à couper*."

"I am not ashamed of my workmanship, nor do I refuse the credit it gives me; but the man who will teach me how to save a tooth that I am now obliged to sacrifice, is my master in the science of dentistry, without the proof of any other claim, and I gladly yield him the post of honour.

"First principles in advance of all experience assure us that all which enters into the art of prevention, preservation and cure, must take precedence of that which only mutilates, substitutes, and replaces."

A common idea that the decision of an eminent man, or learned body of men, is final in scientific questions, is thus happily refuted—

"Speculative truth and the resulting practice lie within the domain of opinion, which is by nature free, and cannot be brought into bondage to any man, or any number of men. Moreover, it is not necessary that all questions should be settled and ended; it is necessary only that the truth should be known, and when every man has given his testimony faithfully he has done his whole duty; a step farther, and he is trespassing on the rights of others. Settling a question of opinion by authority is only in fact *unsettling* a great principle, by arresting inquiry, and forbidding future experience to illustrate and modify the past. Science is not a despotism, and its real cultivators are all equally freemen, and their liberty is as essential to the progression of truth as it is to individual honour."

A. S.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On the Pelvico-Prostatic Ligament, or the Apparatus by which the Bladder, Prostate, and Urethra are attached to the outlet of the Pelvis.*—A memoir on this subject, by RETZIUS, which was originally published in Stockholm, and translated by Fr. Creplin, into Müller's "Archiv.," gives a very lucid account of a region most interesting to the anatomist and surgeon, and we present our readers with the following abstract of its most important details.

The author—after alluding to the once-received doctrine that there existed a constrictor of the bladder, and to the observations of Santesson which disproved this doctrine—directs attention to the muscular apparatus surrounding the urethra, described by J. Müller and Santesson: a structure consisting of oblique muscular fibres, analogous to those of the œsophagus and intestines. The muscles described by Wilson are, Retzius thinks, less constant, and are not always to be found on dissection. In the work in which Müller described the "constrictor isthmi urethralis" (Berlin, 1836), he also made mention of the two important *ischio-prostatic ligaments*. These structures are of considerable strength, and extend from the ascending rami of the ischium to the posterior lateral parts of the prostate. Santesson regards these parts somewhat differently from Müller. He views their attachments to the ascending rami of the ischium, and to the descending rami of the pelvis, as a tendinous arch, to which the constrictor urethræ is fixed. Anatomists are much indebted to Müller for having called attention to these important structures; for he, too, considered them as something more than mere ligaments. They are the cord-like and concave hinder edges of a peculiar fibrous capsule, which embraces not only the prostate, but likewise the membranous portion of the urethra—a capsule which performs the part of an important ligament, and which, in its cord-like edges, includes the muscular fibres described by Santesson as the longitudinal fibres of the constrictor urethræ.

Hyrtl endeavoured to show that the so-called constrictor was, in fact, more than a mere constrictor. The author agrees with him in considering the fibres which pass from the pelvis to the urethra as part of a very complicated muscular apparatus, destined to act upon the membranous portion of the urethra, not as a constrictor, but as an ejaculator seminis, as a compressor of Cowper's glands, and an assistant in the expulsion of urine. He believes that the circular muscular stratum of the urethra constitutes the true constrictor, and that the function of the longitudinal fibres just alluded to is in exact antagonism.

The only writer who has described the fibrous structures about the prostate as a *capsule* is Denonvilliers ("Propositions et Observations d'Anatomie, de Physiologie, et de Pathologie," Paris, 1837; article 3ième, "Anatomie du Périnée"). He finds fault with the ordinary mode of describing the fasciæ, without regard to the parts to which they actually belong, and endeavours to

show that every muscle has its fascia, just like every great blood-vessel and every important organ in the body, as the larynx in the neck and prostate in the perineum. His words, where he treats of the latter organ, are as follows: "The prostate and membranous portion of the urethra are situated in the centre, included within the superior, inferior, and lateral fibrous planes, enveloped on every side, and sheathed like muscles. . . . We can conceive the membranous portion of the urethra to be contained in a species of irregularly-quadrilateral case."

Retzius had for several years been accustomed to teach a similar doctrine; but he attributes certain uses to the pelvic fasciæ, which are not alluded to by Denonvilliers. We extract his description entire:—

Ligamentum Pelvio-prostaticum Capsulare.—The thin membrane which covers the urinary bladder, which has commonly been described as a part of the pelvic fascia, and which passes outwards into the substance of the arcus tendineus of Santesson, stretches from the lower part of the bladder over the prostate. On reaching this organ, it becomes thick, and adheres firmly to the gland. The anterior part of the levator ani is in close apposition with this capsule, and no fascia intervenes between them. The capsule is thinnest at the posterior surface of the gland, passes down between it and the rectum, is prolonged beneath the prostate, covers the back part of the muscular apparatus of the urethra, as well as the included glands of Cowper, stretches sideways to the ascending rami of the ischium, to which it is attached; and between these attachments a thin layer passes down behind the bulb of the urethra, and terminates by a sharp reflection in the so-called triangular ligament. At the sides of the prostate, where the capsule is strongest, it stretches outwards, and is fixed to the neighbouring rami of the ischium and pubes. Thus the sides of the capsule are spread out like a tent, leaving the substance of the gland and covering the plexus venosi pudendales, with the accompanying arteries and nerves. Its attachments to the sides of the pelvic opening extend from the horizontal rami of the pubes almost to the tuberosities of the ischia. The anterior margins of these lateral attachments constitute the aponeurotic part of the pubo-prostatic or pubo-vesical ligaments; the posterior margins, which are stretched above the fasciculi of urethral muscles proceeding from the ischium, have a cord-like form thus given to them, resembling the corners of a square tent, and pass into the back part of the capsule, which has been already described. It is this posterior stretching of the capsule which Müller has figured so well, and termed *ligamentum ischio-prostaticum*, and which Santesson has followed further forwards, and prefers to term *ligamentum pubo-ischiadicum prostaticæ*. Denonvilliers calls this side part "aponeurose latérale de la prostate, or pubio-rectale." Above, the wall of the capsule is only in contact with a small portion of the prostate, and as it descends from the bladder and prostate to the nearest surface of the os pubis, it is stretched by the muscular cords from the muscular coat of the bladder, constituting what have long been known as the pubic attachments of the detrusor urinæ muscle. The tense cord-like borders thus formed are the so-called pubo-vesical ligaments which have already been alluded to. Between these the capsule forms a deep groove, and here also covers the venous plexus *prostaticus impar*, which lies above the urethra and prostate, and behind the symphysis pubis. The front wall of the capsule is formed by the triangular ligament of Colles.

Thus, then, both the prostate and muscular part of the urethra are contained in a capsule or *theca*, with four sides, and as many edges, with a broad basis of considerable extent, firmly attached to the outlet of the pelvis, and with a wide-spreading floor, formed of *ligamentum triangulare*. The two anterior corners of the basis (*Lig. pubo-ves*) lie close together; the two posterior (*Lig. ischio-prostatica*) are widely held apart. Not only does this apparatus form a strong ligament-like means of attachment for the prostate, urethra, venous plexuses, arteries and nerves, it contains, likewise, muscular structures of great importance for the urethra. The muscular apparatus has, as has been already explained, its outer attachment along the inner side of the long borders of the base of the capsule; a circumstance which has induced Santesson to regard the *ligamenta ischio-prostatica*, as the "tendines constrictoris urethræ."

If we inquire how this important and curious structure has so long escaped the observation of anatomists, we find that the reason has been that the ordinary mode of describing fasciæ has made us acquainted with parts, without throwing any light upon their anatomy as a whole. Thus the upper side of the capsule is called lig. pubo-vesicalia; its front or floor lig. triangulare; its lateral surfaces, folds of the pelvic fascia, passing between the levatores ani and prostate; while its back part has received the name of fascia recto-vesicalis.—*Monthly Journal of Medical Science*, March, 1850, from *Müller's Archiv.*, 1849, vii.

2. *On the Existence of two new kinds of Anatomical Elements in the Medullary Canals of Bones.* By M. CH. ROBIN.—In all bones, whether short, flat, or long, the medullary tissue contains, besides the adipose cells, the vessels, and the finely granular amorphous matter, a peculiar kind of cells, which may be termed *medullary cells*; these are spherical, or slightly polyhedric, transparent, with defined borders, and generally include a spherical, regular, transparent, sharply-defined nucleus. Between the nucleus and the cell-wall, and especially around the former, there exists a variable quantity of molecular granules. These cells are more abundant in young subjects than in adults, and towards the end of the period of gestation they occupy nearly the whole of the medullary cavity, to the exclusion of the adipose cells.

Another kind of cell is met with in long and short bones, but normally in less amount: the knowledge of these cells, however, is important, because it is in an unusual development of them that some diseases of bones originate. Certain tumours of bone, considered by pathologists as cancerous, are not truly so, but are made up of large plates or flattened lamellæ, sometimes polygonal, sometimes irregularly circular, having a diameter of at least from 1-20th to 1-12th of a millimetre (or from 2 to 3-1000ths of an inch), finely granular in their texture, and containing from six to ten large oval nuclei, which are embedded in the thickness of the plates. The author states that he has met with these bodies as the principal components of several osseous tumours; and that such tumours owe their origin to an unusual local development of a normal element of bone. For these peculiar bodies are found in the medullary tissue of even healthy bone; being much less numerous, however, than either the true medullary or the adipose cells; but being, like the preceding, more abundant in the bones of young subjects than in those of adults.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Gazette Médicale de Paris*, December 22, 1849.

3. *Researches on the Physiology of the Medulla Oblongata.* By M. BROWN-SEQUARD.—The following are the results of the author's experimental inquiries, made upon fifty-four species of animals, belonging to the five classes of Vertebrata:—1. The life of Batrachia does not seem to be considerably shortened after the removal of the medulla oblongata alone, or with the rest of the encephalon, so long as the animals remain in air of a temperature below 46° (Fahr.) Many individuals have lived, in these conditions, more than three months. 2. The sanguiferous and lymphatic circulation, the cutaneous respiration, the digestion, the mucous, epidermic, and urinary secretions, the nutritive operations, the reflex power, and the properties of nerves and muscles, continue in Batrachia, deprived of the medulla oblongata, with as much rapidity and energy as in those which remain uninjured, and which are exposed to the same temperature. 3. All animals, even adult Mammalia, may survive the removal of the medulla oblongata during from ten to twenty minutes, when their temperature has been reduced below from 86° to 92°. For this result, pulmonary insufflation is not requisite. 4. The most remarkable differences present themselves in the duration of life, in the different individuals of the same species, after the removal of the medulla oblongata, these being in exact accordance with the temperature. Thus the duration of life in the Batrachia may be reckoned by *months*, between the temperatures of 32° and 46°; by *weeks*, between 41° and 54°; by *days*, between 50° and 61°; by *hours*, between 66° and 77°; and by *minutes*, between 86° and 104°.—*Gazette Médicale*, Dec. 22, 1849.

[These experiments, like those formerly made by Dr. W. F. Edwards, fully bear out the general principle, that when an animal has sustained a fatal lesion, the length of its survival is inversely as the rate at which it is living, and that this rate is directly as the temperature of its body. This temperature, in cold-blooded animals, is that of the surrounding medium; whilst in the warm-blooded, it is maintained at a nearly fixed standard by their independent calorifying power.]—*British and Foreign Medico-Chirurgical Review*, April, 1850.

4. *On the Emission of Urine, as observed in an individual suffering from Ectopia of the Bladder.* By Dr. PARMEGGIANI.—A man, æt. 30, having entered the hospital at Reggio with ectopia of the posterior wall of the bladder, so as to exhibit the orifices of the ureters very plainly, the opportunity was taken to make some observations upon the mode in which the urine entered the bladder. The statement of physiologists that it passes in, drop by drop, was not found to hold good. On the contrary, from time to time, it issued in true jets, sometimes fifteen seconds, sometimes thirty seconds, or even two or three minutes elapsing between these, the time varying according to that which had elapsed since fluids were taken into the stomach. The flow had no dependence upon the circulatory or respiratory movements. When emitted, the urine was fetid and alkaline; but in the act of flowing furnished an acid reaction—which is confirmatory of the statement of Stehberger, that the urine is secreted alkaline and becomes acid in the bladder.

Signs of the presence of iodide of potassium were found in one experiment six minutes, and in another twelve, after it had been swallowed; these increasing during twenty-four hours, and then diminishing until they disappeared.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Omedei Annali* vol. cxxiv.

5. *Experimental Researches on the Contractility of the Spleen.*—The discovery of M. Kölliker, that the spleen contains a number of elongated cells, resembling those which are found in contractile tissues, and probably to be considered as a rudimentary condition of muscular fibre, has suggested experimental researches with a view to the determination whether or not the trabecular tissue of that organ can be excited to contraction by the electric stimulus. Such experiments have been performed by Professor WAGNER and M. Cl. BERNARD, with positive results; the form and dimensions of the spleen being considerably changed by the transmission of the electro-magnetic current through its substance.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Gazette Médicale*, December 22, 1849.

6. *On the Means of measuring degrees of Anæsthesia and Hyperæsthesia.* By M. BROWN-SEQUARD.—The means proposed consist simply of an application to the pathological conditions in question, of Professor Weber's well-known method of measuring the relative discriminating power of different parts of the cutaneous surface, by the degree in which the two blunted points of a pair of compasses require to be separated from each other, in order that the double impression may be felt. Thus, in one case of complete anæsthesia of the lower extremities, the patient only felt a single impression on one leg, when the points of the compasses were 10, 15, or even 20 centimetres apart; whilst on the other leg he could distinguish them at a distance of 12 centimetres. The normal limit is generally from 3 to 5 centimetres. In another case of slighter anæsthesia, the limit of the discriminating power was at from 9 to 15 centimetres. And in another case of very slight anæsthesia, the limit was from 6 to 7 centimetres: in a case of hyperæsthesia, on the other hand, which accompanied paralysis of the motor power, the patient could perceive the distinctness of the two points on the foot, when they were separated to the distance of only 5 millimetres; the normal limit of discriminating power in that part being from 25 to 30 millimetres. The sensibility to pain, in this case, was as much exaggerated as the tactile sensibility.—*Brit. and For. Med.-Chirurg. Rev.*, April, 1850, from *Gaz. Méd. de Paris*, Feb. 2, 1850.

MATERIA MEDICA AND PHARMACY.

7. *On the Cod-liver Oils of Commerce—and on the Beneficial Effects of the cheaper Fish Oils.*—At the meeting of the Surgical Society of Ireland, Feb. 23d, Dr. BAGOT drew attention to some of the oils sold as cod-liver oil, many such being found in commerce, which Dr. B. believes do not contain a drop of the oleum jecoris aselli. Dr. B. was induced to bring this subject before the society from a feeling that much credit is given to cod-liver oil for effects which may be equally well produced by some of the cheaper oils, and this becomes a matter of much importance to hospital and dispensary physicians, whose practice in this remedy must be much limited from the high price of the genuine article. “The wonderful powers of this extraordinary medicine are now so well known,” Dr. B. observed, “that I will not dwell on them, but may be excused from referring to the very instructive and scientific paper with which my friend Dr. Benson favoured the society a short time since [see preceding number of this journal, p. 485], in which the curious fact was for the first time laid before the profession, that as the patient under the use of this oil becomes fat, just in the same ratio does his vital capacity decrease. His paper was of that deep practical importance which ever characterizes his communications, and I trust the learned gentleman will continue his researches relative to this interesting fact, keeping in mind the inquiry in how far, or whether, this might be remedied by the continued use of tartar emetic.

“Allow me to call your attention to the oils on the table; I have been kindly supplied with those two specimens of pure cod-liver oil by the Apothecaries’ Hall, and Messrs. Bewley and Evans. I brought them that the society might have an opportunity of contrasting them with the other oils which may be, or are, sold as cod-liver oil. The specimen marked ‘Cod Oil’ was purchased in London under the name of cod-liver oil, but from the price paid for the article, it is impossible that it can be genuine. However, it produces the effect required by the physician—viz., fattening and strengthening his patient, and it matters little under what name it be administered, if it have a beneficial action. On carefully comparing it with this specimen of genuine ‘Train Oil,’ purchased at Boileaus’, they seem to be identical in taste and smell, and what is remarkable, both give a violet colour with sulphuric acid, which many suppose to be a test for cod-liver oil. I am inclined to believe that there is much of this train oil sold, at a high price, labelled ‘Oleum Jecoris Aselli,’ that the effects are equally wonderful, I have already proved to my own satisfaction, and any medical man may demonstrate the same by administering it to his patients.

“To illustrate the benefit to be derived from this cheap oil, I will, from among many, mention one case. Mr. W., a clerk in the employment of a wine merchant, became affected with phthisis. When I first saw him, in August, 1849, he had disease of the apex of the left lung, which had run into abscess of considerable size. He was much reduced in flesh and strength, having profuse perspirations, occasional diarrhoea, harassing cough, &c. &c. He commenced by taking small quantities of this ‘cod oil,’ gradually increasing the dose to half an ounce three times a-day. The following table will show his increase in weight up to the present date:—

August 31, 1849, he weighed	.	.	.	8st. 4 lbs.
September 18,	.	.	.	8st. 6 lbs.
October 18,	.	.	.	8st. 12 lbs.
November 18,	.	.	.	9st. 1 lb.
December 18,	.	.	.	8st. 11 lbs.
January 18, 1850,	.	.	.	9st. 0 lb.
February 18,	.	.	.	9st. 1 lb.

“The first administration of the oil was attended with a restoration of appetite and general amelioration of his symptoms almost marvellous. This case will serve to exemplify the beneficial effects of this oil, which can be purchased at the low price of 3s. per gallon. This young man was able to resume business a very short time subsequent to his commencing the oil. I have another

case of a young lady with diseased lung, who has been taking it since the 12th of February, 1849, on whom it has had the same extraordinary effect. She is fat and strong, able to walk eight or ten miles, although a year since she was confined to bed for a fortnight from the debility of phthisis. She was seen at that time by Sir Henry Marsh, who agreed with me as to the existence of disease of her lung.

"One word as to the best mode of administering cod-liver oil. I consider the infusion of cloves to be by far the best vehicle; for besides being a stomachic, and acting as a gentle stimulant, it so disguises the smell and taste of the medicine that it is quite possible to give it to a squeamish patient, without informing him of what the dose is composed; and that sometimes becomes a matter of importance, especially with ladies who have delicate stomachs. It should also at first be given in small doses, half an hour before the patient rises in the morning, and after he goes to bed at night.

"I trust this communication may help to clear up the question which has been started—viz., whether other fish oils may not have the same beneficial effect as the cod-liver oil? From the cases which have come under my notice, I feel quite certain that they are equally useful in the treatment of phthisis, and if this prove to be true, I need not tell the society how invaluable will be the discovery to those in poor circumstances.

"I have also laid on the table specimens of sperm and whale oils, to show that they could not be substituted for cod-liver oil, both from their smell and taste.

"Neither do they afford the violet colour with sulphuric acid. Whether these oils, procured from the mammalia, have the same fattening powers which the fish oils possess, I believe has not been yet ascertained."

Dr. STAPLETON was of opinion that whenever pure cod-liver oil could be had, they ought to use it, and for this reason—namely, that the liver of the cod had been found peculiarly efficacious in the treatment of rheumatic affections amongst the Norwegian fishermen. It was tolerably well known that in Norway it was not used as oil alone, but was taken in the liver itself. The latter was extracted from the fish, was put into the stomach which was removed from the cod for the purpose, and some salt and pepper being added, the stomach was filled up with water, and tied at one end. The whole was then boiled, and the liver thus prepared being used as an article of diet, was found highly beneficial in the treatment of rheumatism. But there was another point bearing on this important subject which deserved their attention. It was, that there was only one period of the season at which the liver of the cod yielded the oil in a state of purity—namely, just in the beginning of the season when the liver was of a light cream colour. As the season drew towards its close, the liver gradually acquired a reddish hue, and when such was the case, scarcely any oil could be obtained, even from a large number of them; but in the commencement, it contained an abundance of oil of a superior quality. In the beginning of the season it was obtained by "cold expression," but towards the close, it could only be procured by boiling the livers, in which case, the product was exceedingly thick, had a most disagreeable odour, and would not sit so easily upon the stomach as the oil procured by cold expression in the early part of the season. He did not deem it necessary to go further into the history of cod-liver oil, but he might mention that an oil much superior to that obtained from the common cod was procured from the liver of another gadus—namely, the Torsk, and which was pretty extensively employed in rheumatism, and was thought to act more beneficially in that disease than the genuine cod oil.—*Dublin Medical Press*, March 6th, 1850.

8. *Almond Oil as a substitute for Cod-Liver Oil.*—Dr. P. M. DUNCAN, Physician to the Essex and Colchester Hospital, and Mr. R. S. NUNN, Surgeon to the same institution, have communicated to the *Provincial Medical and Surgical Journal* for March 20, the following remarks on the applicability of the common sweet almond oil to all cases for which cod-liver oil is prescribed.

"In a flat and damp agricultural district, where, amongst a certain class, intermarriage is very frequent; where intermittent fevers, scrofula, and all kinds of disease characterized by the presence of an adventitious product in the system,

are very common, and where, on account of scanty food and clothing, diseases are generally of an adynamic type, it is not to be wondered at that medicines which enhance the nutritive powers should be very largely prescribed.

"We have always subscribed to that opinion which denies the specific agency of the *oleum jecoris aselli* in tuberculous and like diseases, and attributes the benefit conferred to its influence on the assimilative processes. We have prescribed the cod-liver oil with great success, both in hospital and in general practice, and consider that its only drawbacks are its nauseous flavor and high price. In June last, we agreed to prescribe a vegetable oil instead of the *oleum jecoris*; and our experience is highly favorable to the therapeutical virtues of the *oleum amygdalæ*. We have reason to declare that the almond oil and the cod-liver oil act precisely in the same manner; and the first mentioned oil has anything but a disagreeable taste, and can be obtained for at least one-third of the price of the best cod-liver oil. Our experience of the beneficial effects of almond oil has been derived from upwards of two hundred and fifty well-observed cases; in no one case has it purged, and the contrary effect is very frequently produced. We are in the habit of prescribing the oil without any adjunct, at first in one-drachm doses, half an hour after every meal. The dose is gradually increased. A drop of eau-de-cologne, or of some essential oil, renders the 'neat' oil anything but disagreeable to the taste. It is an excellent vehicle for the exhibition of iodine in small doses, the latter being rubbed down with a small quantity of olive oil, and then added to a larger amount of almond oil. The following formula has been of great use in several cases of syphilitic diseases of the bones and skin, in broken-down constitutions, in chronic pleurisy, and in many cases of chronic enlargement of the glands of the neck:—*R. Olei amygdalæ* ℥ss; *olei olivæ* ℥ij; *iodinii* gr. $\frac{1}{2}$. *M.* A third part to be taken three times a day.

"The influence of half an ounce of this oil of almonds, taken daily, upon the weight of some patients progressing in health under its exhibition, is very remarkable. In one case, there was a weekly increase of two pounds, and in another, of four pounds. Care must be taken to attend to the biliary secretion during the exhibition of the oil, which is contraindicated when there are evidences of local congestion, or of inflammation."

9. *Citrate of Iron and Magnesia*.—The citrate of iron and magnesia appears, to M. VAN DER CORPUT, likely to come into general use among ferruginous preparations, being easy of administration, and not liable to produce constipation. It is prepared by dissolving two parts, by weight, of recently precipitated hydrated oxide of iron in a solution of three parts of citric acid; the liquor is then saturated with carbonate of magnesia, and evaporated to dryness. The salt is in the form of shining brown scales: the taste is sweetish, very slightly inky, and not at all disagreeable. It is perfectly soluble in water: it is not deliquescent, so that it may be given in the form of powder. It may be prescribed in doses of 15, 30, or 60 centigrammes ($2\frac{1}{2}$, 5, or 10 grains).

Syrup of Citrate of Iron and Magnesia is prepared by dissolving 8 grammes in 15 grammes of orange-flower water, with 180 grammes of simple syrup. This is one of the most agreeable preparations of iron.

Saccharine Confection of Citrate of Iron and Magnesia.

Take of citrate of iron and magnesia	1 drachm
Powdered sugar	$7\frac{1}{2}$ drachms
Powder of canella	1 drachm

Mix, and divide into powders, each containing twelve grains.

Lozenges of Citrate of Iron and Magnesia.

Take of citrate of iron and magnesia	$\frac{1}{2}$ drachm
Powdered sugar	$7\frac{1}{2}$ drachms
Saccharine confection of vanilla	$\frac{1}{2}$ drachm
Mucilage of tragacanth, a sufficient quantity.	

Mix, and divide into lozenges of twelve grains.—*London Journal of Medicine*, April, 1850, from *Journal des Connaissances Médico-Chirurgicales*, March, 1850.

10. *Alkali obtained from the Khaya Senegalensis (Swietenia Senegalensis) a cheap substitute for Quinine.*—M. CAVENTOU has obtained an alkali from the above-named tree, which he thus describes: It is non-crystalline, solid, opaque, of resinous aspect, yellow, very bitter, slightly aromatic, and easily soluble in water. If this salt possess the powerful anti-periodic properties of the bark from which it is derived, it must become a valuable article of the *materia medica*, as the price of quinine (from the alleged scarcity of the cinchona bark) is becoming dearer every year. According to M. Servant, the inhabitants of Senegal cure the worst cases of intermittent fever by a watery decoction of the bark of the khaya.—*London Journal of Medicine*, April, 1850, from *Journal de Pharmacie et de Chimie*, November, 1849.

11. *Physiological Effects of Oil of Turpentine.*—Dr. THOMAS SMITH, in an interesting article on the Therapeutic Uses of Terebinthinate Medicines, in the *London Journal of Medicine* (April, 1850), gives the following account of the physiological action of turpentine.

“Turpentine, when taken internally, exerts a peculiar action on the mucous surfaces, and the tissues superimposed upon them: it increases the peristaltic motion of the bowels, inducing purgation, and, in very large doses, hypercatharsis; it promotes the flow of urine, impregnating it with a violet odour; and, if its action be specially directed to the kidneys, may produce strangury and bloody micturition. It determines to the skin, producing copious and free diaphoresis, sometimes attended with an itchy eruption. It also taints the pulmonary exhalation with its characteristic smell. A large dose has been taken internally, and failed to produce action of the bowels or kidneys; the vapour of the turpentine has then been discharged through the skin and pulmonary organs; this was the case with the experiment that Dr. Copland instituted upon himself. I once gave half an ounce to a boy of sixteen years of age, which occasioned no other unpleasant symptoms than an increase of the respiratory movements, and acceleration of the circulation, with a tendency to somnolency, followed by a profuse discharge from the urinary organs. The breath and perspiration were tainted with a turpentine odour for upwards of a week; the bowels remained inactive until he had taken eight ounces of the compound infusion of senna, with ten grains of calomel; the evacuations, when passed, were extremely fetid, black, and slimy, but giving off no smell of turpentine. Hertwig injected two drachms into the veins of a horse; trembling, reeling, with inclination to pass stools, and frequent micturition ensued. Fever and bronchitis were set up, and the animal died in nine days. Schubert found that two drachms, given to a dog, caused tetanus and death in three minutes. I once saw half a drachm administered to a young cat: the poor creature mewed piteously, was extremely restless for several hours, and had constant micturition, unaccompanied with diarrhoea; after some hours, it fell into a profound lethargy, from which it awoke perfectly well; its eyes remained injected for several days.

“Turpentine seems peculiarly destructive to vegetable existence. Small insects are speedily destroyed by it; indeed, no other drug appears to exert so fatal an influence over the majority of parasites which infest animal and vegetable life.

“When taken internally, it has been detected in the various secretions of the human body. Todd and Johnson have met with it in the kidneys of a patient who died from hemorrhage; it has also been detected in the chyle of a dog and horse, to which it had previously been administered, by Tiedemann and Gmelin.”

12. *On the Relative Potency of Chloroform and Ether, and on some Dangerous Effects of Chloroform.* By JOHN SNOW, M.D.—Chloroform is much more powerful than ether, and this is one reason why it is in some respects more convenient. Its greater potency depends on its being more sparingly soluble in the blood than ether. The quantity of chloroform required to induce insensibility is less than one-tenth as much by measure, as in the case of ether. Viewed in this manner, it is more than ten times as strong; but to ascertain

their comparative physiological power, when inhaled in a similar manner, their volatility requires to be taken into account. In order to perceive the relative strength of these two medicines, we may suppose that the air which a patient breathes is saturated at 60 deg.—the ordinary temperature of a dwelling-room—with one or other of the vapours, and see how much air he would have to breathe in either case, in order to be narcotized to the third degree—the extent of insensibility usually required in a surgical operation. Thirty-six minims is about the average quantity of chloroform required to produce this degree of narcotism in the adult, and this would saturate 257 cubic inches of air at 60 deg., making it expand to nearly 300 cubic inches, which would be breathed in twelve ordinary respirations of 25 cubic inches each. The quantity of ether usually required to produce the same amount of insensibility in the adult is about $7\frac{1}{2}$ fluidrachms; this would saturate 440 cubic inches of air at 60 deg., and increase its volume to rather more than 800 cubic inches, which would require thirty-two ordinary respirations to breathe it. We see, therefore, that twelve inspirations of air charged with vapour of chloroform are equal to thirty-two similar inspirations of air charged with vapour of ether, at the same temperature; and that consequently chloroform is nearly three times as strong as ether. In actual practice, the difference in strength is generally greater than this, for ether abstracts much more caloric than chloroform during its evaporation, thereby reducing the temperature of the air passing over it, and the sponge or whatever contains it, and limiting its own evaporation in a greater degree. It follows, therefore, that the fact of accidents not occurring under the use of ether, could be no guarantee that they would not happen during the employment of chloroform.

When an animal after it has become completely insensible, is allowed to continue breathing air charged with the vapour, the respiration shortly ceases; but if the air do not contain more than about five per cent. of the vapour, the heart continues to pulsate for some time after the breathing has ceased, and the circulation is finally arrested for want of the respiration, as in all other cases when death takes place by apnœa. I have heard the pulsations of the heart by means of the stethoscope several times for one or two minutes after the breathing has ceased, in cats and rabbits under the influence of chloroform. During this interval, life is easily recalled by means of artificial respiration; indeed, more than once, moving the animal, or pressing on its chest, whilst using the stethoscope, has apparently been the means of resuscitating it. This persistence of the heart's action, as I have elsewhere shown, does not arise from any incapacity of chloroform to paralyze it, but from the circumstance that the sensibility of that part of the nervous system on which the motions of respiration depend, is abolished by a somewhat smaller quantity of the narcotic than is requisite to suspend the action of the heart. When, however, an animal is made to breathe air containing a greater quantity of the vapour, ten per cent. or upwards, death takes place rapidly in from half a minute to about two minutes, and the respiration and circulation cease about the same time. The reason of this is, that there is sufficient vapour in the lungs, at the moment when the breathing stops, to paralyze the action of the heart as soon as it is absorbed and added to that already contained in the blood. Under these circumstances, it is evident that artificial respiration can be of no avail; and this is the manner in which there is every reason to believe the greater number of the fatal cases of inhalation of chloroform have occurred.

Sometimes a patient begins all at once to breathe deeply during the inhalation; and under these circumstances, if the vapour be not largely diluted, it will be inspired with dangerous rapidity. The first incision by the surgeon's knife, when the patient is unconscious, but not totally insensible, sometimes has the effect of causing him to draw a deep inspiration, and to hold his breath at the end of it, retaining the air in his lungs; now an inspiration of this kind might, on a moderate computation, introduce 100 cubic inches of air; and if this were charged with vapour of chloroform, by passing over a handkerchief or sponge, it might contain ten or twelve minims; if the air or the handkerchief were warm, it might, indeed, contain much more; but this quantity added to that already in the circulation might cause a fatal accident.

It must be sufficiently evident from these considerations that unless some means were used for regulating the strength of the vapour, fatal accidents would be liable to occur from the employment of chloroform. Unfortunately, Dr. Simpson, to whom we are indebted for its introduction, recommended it to be used on a handkerchief, and even held it out as one of the advantages of the new anæsthetic, that it did not require any apparatus. This advice, coming from so high a quarter, could not fail to meet with numerous followers; and to this circumstance many of the accidents that have occurred must, in my opinion, be partly attributed.—*Dublin Medical Press*, April 10th, 1850, from *Edinburgh Medical and Surgical Journal*.

13. *Adulteration of Muriate of Morphia.* By MORSON, of London.—In my note, published in the last number of your journal, I stated that salicine was the substance used in the recently detected adulterations of muriate of morphia. I had come to that conclusion from a hasty examination of the adulterated salt, relying principally on the oil of vitriol test; but a more careful examination to which I was subsequently led by the supposition that a manufacturer, disposed to adulterate, would employ a less costly article than salicine, has convinced me I was in error, and that sugar was really the substance employed. This correction, although unimportant in a commercial point of view, calls for a few remarks with reference to the detection of sugar under such circumstances. The perfect similarity in colour of the reaction of oil of vitriol on the salt containing sugar, as compared with that produced when salicine is present, renders this test unavailing as a means of distinguishing the two substances named when mixed with the morphia salt; nor is it easy to detect the sugar by its taste, in the mother-liquor resulting from the decomposition of the salt by ammonia, as the presence of a little muriate of ammonia completely masks the sweet flavour. This latter salt probably also affects the process of fermentation in estimating the sugar in that way, for it was found that the alcohol obtained from a specimen of the adulterated salt represented a little more than half the quantity of sugar presumed to be present. On the other hand, the detection of salicine offers no difficulty. It is simply necessary to precipitate a solution of the suspected salt in four times its weight of water at a boiling temperature, with very slight excess of ammonia, to filter while hot, and to concentrate the filtrate, when the salicine will crystallize out, being sparingly soluble in cold water. The adulterated salt has been in the London market for more than twelve months, although its real character was not known, and I have ascertained that several hundred ounces of it have been recently sold.—*Mr. Morson, of Southampton Row, Russell Square, in Pharm. Journ.*

Here is another exposure of the chemical frauds, respecting which we have already had occasion to caution our readers. The preparations which are now the subjects of these frauds demand the most scrupulous care and accuracy, both in the manufacture and in the administration; and when we consider the alarming and fatal consequences likely to ensue from the circulation in the trade of fabricated articles of this description, we think no apology is required for bringing the subject prominently forward. Let us consider, for a moment, the probable result of the adulteration of a morphia salt with fifty per cent. of sugar or other inert substance. The manufacturer sells his preparation at less than the prime cost of the genuine article: he either obliges the honest manufacturer to sell at a loss, or he drives him out of the market. The wholesale purchaser of the fabricated salt sells it to the retail chemist, who supplies it to his customers. A patient finds that the desired effect is not produced, and he increases the dose until relief is obtained. He procures a supply at another shop where the preparation is genuine, and consequently double the strength; he takes the same quantity, which produces an alarming effect. We have known many instances in which patients have been nearly poisoned in this way, not only with opium and its preparations, but also with prussic acid, extract of colocynth, and other powerful medicines.—*Dublin Medical Press*, Feb. 27, 1850, from *Pharm. Journ.*

MEDICAL PATHOLOGY, THERAPEUTICS, AND PRACTICAL MEDICINE.

14. *On Typhoid and Typhus Fevers. An Attempt to Determine the Question of their Identity or Non-Identity, by an Analysis of the Symptoms, and of the Appearances found after Death, in Sixty-six Fatal Cases of Continued Fever, observed at the London Fever Hospital, from January, 1847, to February, 1849.* By W. JENNER, M.D., Professor of Pathological Anatomy in University College, London.—This is the title of an extremely interesting paper, which has been published in successive numbers of the *Monthly Journal of Medical Science*, commencing in the number for April of last year, and concluded in the number for April of the present year. It constitutes one of the most important contributions to the history of continued fever that has yet been made, presenting, as it does, the carefully recorded histories of a very large number of cases, admirably arranged and analyzed, by a highly competent and reliable observer. We hasten to lay his results before our readers, and, as the best means of doing so, we shall adopt the author's own recapitulation of the differences in the symptoms and lesions of structure analyzed in his paper.

Age.—Typhoid fever was limited, in the cases here considered, to persons under 40 years of age; nearly one-third of the forty-three cases of typhus were more than 50 years of age.

Mode of Attack.—As a general rule, the attack of typhoid fever commenced more insidiously than that of typhus fever. This observation, like all others in this paper, applies, of course, only to fatal cases.

Duration.—The average duration of the fatal cases of typhoid fever was 22 days. Of the fatal cases of typhus fever, 14 days. Half the cases of typhoid fever survived the 20th day of disease. Not a single case of typhus fever survived the 20th day of disease.

Eruption.—The difference in the appearance of the eruption in the two diseases was as great as it well could be, considering that both were of a red-dish hue.

Miliary Vesicles or Sudamina.—These vesicles were present in an equal proportion of the cases of both diseases under 40 years of age. But in no cases of typhus fever, more than 40 years of age, were they detected.

“Subsequent experience leads me to believe that miliary vesicles are rarely seen on individuals more than 40 years of age; and very rarely, indeed, if ever, on patients more than 50 years old. I have, during the last year—*i. e.*, since my attention was directed to this point—seen these bodies on no one of the many patients more than 50 years of age, labouring under various diseases, that have come under my observation.

Expression, Manner, Hue of Face, &c.—As the rule, in the cases of typhoid fever here analyzed, the expression was much less indicative of prostration, and more anxious, than in the cases of typhus fever. In the former disease, the complexion was tolerably clear, and the flush, when present, was of bright pink colour, limited to one or both cheeks, and often distinctly circumscribed. In typhus fever, on the contrary, the complexion was thick and muddy, the flush of the face uniform, and of a dusky red colour.

Headache was a constant symptom in all the cases of typhoid and typhus fevers; but it disappeared by about the 10th or 12th day in the latter, and not till the termination of the second, or middle of the third week, in the former.

Delirium commenced in three only of ten cases of typhoid fever before the 14th day; while it began in fourteen out of fifteen cases of typhus fever before the 14th day. As a rule, the delirium was decidedly more active in typhoid than in typhus fever.

Somnolence.—In eight out of nine cases of typhoid fever, somnolence commenced after the 14th day of disease. In seventeen out of eighteen cases of typhus, before the termination of the second week.

Coma-Vigil.—One-fifth of the cases of typhus fever experienced coma-vigil; not a single case of typhoid fever experienced that condition.

Spasmodic Movements were nearly equally frequent in the two diseases.

"*Retention of Urine, and Involuntary Discharge of Urine and Stools*, occurred with equal frequency in the two diseases; but at a much earlier date in typhus than in typhoid fever.

"*Loss of Muscular Power*.—Little more than a fourth of the patients attacked with typhoid fever kept their bed entirely before the 7th day of disease. All the patients affected with typhus, whose cases are here considered, took altogether to their beds before the 7th day of disease.

"The prostration was rarely so extreme in the cases of typhoid fever as in those of typhus fever. Extreme prostration, when it did occur in typhoid fever, was not observed till from the 14th to the 30th day, while in a large majority of the cases of typhus fever it was marked between the 9th and 12th day of disease.

"*Epistaxis* was present in five of fifteen cases of typhoid fever—in not one of twenty-three cases of typhus fever.

"*Hearing* was equally and similarly affected in the two diseases.

"*Eyes*.—The conjunctivæ were *very much* more constantly and intensely injected in the cases of typhus than in those of typhoid fever; the pupils were absolutely larger than natural in a majority of the cases of the latter disease, while these were abnormally contracted in a large majority of the cases of the former affection.

"*Tongue*.—Although individual cases of the two diseases may have closely resembled each other in the appearance of the tongue, yet, taking the whole of either group of cases, this organ presented a singularly different aspect in the one from what it did in the other. It was much more frequently moist throughout the disease in typhoid than in typhus fever. When dry, it was often red, glazed, and fissured, in the former; rarely so in the latter. Again, in typhoid fever, when the tongue was brown, its hue was much less deep—it was of a yellowish, instead of a blackish, brown. The small, dry tongue, with red tip and edges, smooth, pale brownish-yellow fur, fissured—the surface seen between the fissures being deep red—may be considered differentially as a diagnostic sign of typhoid fever. One only of twenty patients affected with typhoid fever, but eight of forty patients labouring under typhus fever, were unable to protrude the tongue when bidden.*

"*Intestinal Hemorrhage* occurred in one-third of the patients affected with typhoid fever—in none of those suffering from typhus fever.†

"The other abdominal symptoms and signs need no recapitulation.

"*Appetite and Thirst*.—No difference in the two diseases.

"*Pulse*.—The frequency of the pulse fluctuated much more, from day to day, in the cases of typhoid than in those of typhus fever.

"*Cough and Physical Chest Signs*.—Sonorous râle was very much more frequently present in the cases of typhoid than in those of typhus fever—*i. e.*, it was present in eleven out of twelve cases of the former, and in seven only of twenty-one cases of the latter. Dullness of the most depending part of the chest, from intense congesting of the lung, was observed in nine cases of typhus fever—in no case of typhoid fever.

"*Sloughing* appeared to be nearly equally frequent in the two diseases.

"*Erysipelas* occurred in seven of the twenty-three—*i. e.*, in nearly a third of the cases of typhoid fever; in two only of the forty-three cases of typhus fever—*i. e.*, in less than one-twentieth of them.

"*Cadaveric Rigidity* ceased much more quickly in the subjects dead from typhus fever than from typhoid fever.

"*Discoloration of the Walls of the Abdomen, and of the Skin covering the larger Veins*, was much more frequently present in those dead from typhus than typhoid fever.

* This clearly indicates the difference in the amount of prostration in the two diseases.

† I may remark that in one case only of typhus fever, received into the London Fever Hospital during the last three years, has blood passed from the bowels. The case referred to was that of an old man who had hemorrhoids, which occasionally bled when he was in health. During the time specified, notes of near two thousand cases have been taken.

"*Emaciation* had made greater progress in the typhoid than in the typhus subjects.

"*Spots*.—The spots observed during the progress of the cases of typhus fever continued after death; no trace of the spots visible during life could be detected after death from typhoid fever.

"*Head*.—After typhoid fever, the pia mater and arachnoid separated from the convolutions with abnormal facility in one only of nine cases examined with reference to the point. The vessels of the pia mater were abnormally filled with blood in one-third of the cases, but intensely congested in one only of fifteen cases; the cerebral substance was congested in one-seventh of the cases. After typhus fever, the pia mater and arachnoid separated with abnormal facility in nine of eleven cases of which notes on the point were made. The vessels of the pia mater were congested in nearly half, and intensely congested in one-fifth, of the whole of the cases; while the cerebral substance itself was abnormally congested in half.

"*Hemorrhage into the Cavity of the Arachnoid*, which was not found in a single case of typhoid fever, had occurred before death in one-eighth of the cases of typhus fever.

"The amount of serosity found within the cranial cavity was decidedly greater after typhus than typhoid fever.

"*Pharynx*.—After typhoid fever, this organ was found ulcerated in one-third of the cases. After typhus fever, ulceration of the pharynx was not detected in a single case.

"*Larynx*.—Ulceration of the larynx was found in one of fifteen subjects dead from typhoid fever—in one of twenty-six from typhus fever.

"*Œsophagus*.—After typhoid fever, ulcerated in one of fifteen cases in which it was examined. After typhus fever, the Œsophagus was free from ulceration in all the twenty-four cases in which it was examined.

"The epithelium separated from the Œsophagus spontaneously at an earlier period after death from the latter than the former disease.

"*Stomach*.—In none of the fifteen cases examined after death from typhoid fever was the mucous membrane of the stomach softened throughout its whole extent; in no case did softening of the cardiac extremity approach perforation. In four of thirty-seven cases of typhus fever, the whole mucous membrane of the stomach was softened; and in four others there was such extreme softening of the whole of the coats of the great *cul-de-sac* that they were perforated by the slightest violence.

"*Small Intestines and Mesenteric Glands*.—The presence or absence of lesion of these organs was the ground on which the cases of typhoid and typhus fever here analyzed were divided from each other—consequently they were invariably diseased in the one and normal in the other.

"*Large Intestines*.—After death from typhoid fever, the mucous membrane of the large intestines was found ulcerated in rather more than a third of twenty cases. In no instance after death from typhus fever.

"*Peritoneum*.—As peritonitis was in typhoid fever secondary to, and dependent on, the entero-mesenteric disease, it may here be excluded from consideration.

"*Spleen*.—This organ was enlarged in all the cases of typhoid fever—softened in one-third of the cases only. Before the age of 50, it was as large after typhus as typhoid fever; after that age, it was decidedly smaller in the former than in the latter affection. After the age of 50, it was as soft in typhus as in typhoid fever; before that age, it was less frequently softened.

"*Gall-Bladder*.—There was ulceration of the lining membrane of the gall-bladder in one of fourteen cases of typhoid fever; in none of thirty-one cases of typhus fever. In the latter disease, the bile was much thicker, and of a darker green colour than in the former.*

* The condition of the bile, as found after death in these two diseases, is worthy of more careful investigation. The difference in appearance is, in a large majority of cases, well marked.

“*Liver, Pancreas, Kidneys.*—These organs were more flabby in the cases of typhus than in those of typhoid fever.

“*Urinary Bladder.*—This viscus was ulcerated in one of the cases of typhoid fever—in none of the cases of typhus fever.

“*Pericardium.*—This cavity contained a small amount of yellowish, transparent serosity in all the cases of typhoid fever examined. The contained serosity was red, from transudation of a solution of hæmatosin, in five of thirty-one cases of typhus fever, in which the pericardium was examined before the termination of the fever.

“*Heart.*—The muscular tissue of this organ was much more frequently and decidedly flabby, and its lining membrane was much more frequently and deeply stained of a dark red colour, in the cases of typhus fever than in those of typhoid fever.

“*Lungs.*—Granular and non-granular lobular consolidation were very frequent in the subjects dead from typhoid fever—rare in those dead from typhus fever. The reverse was the fact with reference to consolidation from congestion of the most depending part of the lung.

“*Pleura.*—Recent lymph or turbid serosity was found in six of fifteen cases of typhoid fever—*i. e.*, between half and one-third, or in the proportion of 40 per cent. The same lesions, but much less in amount, were found in two only of thirty-six cases of typhus fever—*i. e.*, one-sixteenth, or in the proportion of 5.5 per cent.

“The particulars here briefly recapitulated, and still more those fully detailed in the foregoing papers, appear to me to prove indisputably that the symptoms, course, duration, anatomico-pathological lesions, and the tendency to cadaveric changes, are different in typhoid fever to what they are in typhus fever.

“To account for the differences in symptoms which exist in continued fever, with and without entero-mesenteric disease, the two following assertions have been put forward:—

“1st. That typhoid fever is merely typhus fever complicated with lesions of a particular organ; and, therefore, it is to be expected that certain symptoms referable to, and dependent on, that lesion will be present, and so far modify the symptoms of the disease. If the symptoms and signs referable to the intestinal disease as a cause—*i. e.*, the condition of the tongue, the diarrhoea, increased resonance, and fullness of the abdomen, gurgling in the iliac fossa, pain and tenderness in the same region from the fluctuation of the contents of the bowel—were the only symptoms by which typhoid fever was separated from typhus fever, although the idea might cross the mind that they were two diseases, no sufficient ground for their separation would be present, unless the specific cause of the one was proved to be different from that of the other. But, putting aside the symptoms strictly referable to the abdominal lesion, the general symptoms of the two diseases, in the cases here analyzed, differed widely; such differences having no apparent connection with the local affection, but being probably, like it, dependent on some common cause acting on the whole system simultaneously.

“Thus the remarkable differences in the kind, not simply amount,* of the rash in the two diseases; and the tendency to local inflammations, to erysipelas, and to ulceration, observed in the cases of typhoid fever here analyzed, cannot, with any show of reason, be considered to have been dependent on the disease of Peyer’s patches—*i. e.*, in the same way as the abdominal signs undoubtedly were; and it is to be carefully borne in mind that the external, the hygienic conditions of either group of cases were precisely the same in all respects. They occupied the same wards, partook of the same diet, slept on the same beds, under the same amount of clothing, and had the same physicians to attend them, and the same nurses to wait on them.

“Moreover, of the symptoms common to the two, the headache continued longer, and the delirium and somnolence came on, as we have seen, much later,

* I have elsewhere shown that the rash and the intestinal disease cannot be considered supplementary of each other. See *Medical Times*, December, 1849, and January, 1850.

in typhoid than in typhus fever; and the delirium, too, possessed a more active character. These differences, also, cannot be explained by the presence of intestinal disease in the former, and its absence in the latter affection.

"The short comparative duration of the cases of typhus fever here considered is another remarkable point of difference, totally inexplicable by the hypothesis that typhoid fever is typhus fever with intestinal ulceration. Had the cases eventually recovered, it might have been said that the intestinal lesion prolonged the disease in the cases of typhoid fever; but that all the fatal cases of fever, with a local lesion of so severe a nature as that recorded to have been present in the cases of typhoid fever, should have had a much longer course than all those other fatal cases of fever in which no organic change of structure could be detected after death, appears to me inexplicable, on the supposition that the former is simply the latter disease, with this serious lesion superadded. Let me repeat, by this hypothesis we are asked to imagine that death is retarded in fever by extensive ulceration of the small intestines, and enlargement, softening, and even suppuration of the mesenteric glands. Surely, it behoves the supporters of such a statement to bring forward cogent proofs of the identity of the specific cause of the two affections ere they ask us to admit its truth.

"The same mode of reasoning appears to me equally conclusive, when we consider the comparatively early period of the disease at which the patients suffering from fever lost the ability to make muscular exertion. For to suppose that the presence of abdominal complication in fever invariably prevented the extremely early supervention of debility is, *à priori*, still more absurd than to suppose such lesions to have retarded death. How, again, are we to explain, if we regard typhoid as typhus with abdominal complication, the differences observed in the ages of the patients, in their general manner; the muddy hue of the skin, and uniform flush of the face, the injected conjunctivæ, and contracted pupils in typhus fever; and the comparatively clear complexion, the pink flush limited to the cheeks, the pale conjunctivæ, and the large pupils, in typhoid fever?

"In what way, also, are we to account for the differences observed in the physical breath signs, on the supposition that the one is merely the other, with abdominal complication?

"Death itself, moreover, adds new proof to the non-identity of the general affection in the two diseases. The comparatively rapid loss of muscular rigidity, the discoloration of the surface, the more flabby condition of the heart, liver and kidneys, the extreme softening of the stomach, and the early separation of the epithelium, after typhus fever, are all cadaveric changes, by which death makes us cognizant of a condition of the system at large, which condition must have existed anterior to the cessation of life from that disease; and which condition could not have been present in the cases of typhoid fever, or death would have made it manifest.

"I need not here more than advert to the difference observed in the lesions which death simply enabled us to lay bare. The almost constantly congested brain and membranes in typhus fever; the frequent presence of the signs of pre-existing serous inflammation in typhoid fever; the difference in the nature of the pulmonary lesions in the two—are inexplicable on the supposition that the one disease is the same as the other, excepting so far as concerns the abdominal affection.

"Thus tried by facts—*i. e.*, by recorded symptoms and lesions—the assertion that typhoid fever is merely typhus fever with abdominal complication, is completely refuted.

"2d. But another mode of explaining the differences which exist between the two diseases has been given—*i. e.*, that the differences observed depend on variations in the epidemic constitution. These cases afford a complete answer to this assertion. For a majority of the cases here analyzed of both diseases were observed during the same epidemic constitution. If the reader will refer to p. 668 of the last volume of this Journal, he will find that nineteen of the cases of typhus fever I have used in these papers were collected between May and November, 1848; and that thirteen of the cases of typhoid fever were collected during the same months of the same year. For such as prefer broad,

general assertions to the details of particular but more limited facts, I may remark, that during three years' attentive watching of nearly all the cases admitted into the London Fever Hospital, in which time there have been epidemics of relapsing fever, typhus fever, and cholera—and, consequently, according to those whose opinions I am here examining, as many changes in epidemic constitution—I have seen no alteration in the general or particular symptoms of either typhus or typhoid fevers, or the lesions observed after death from either—*i. e.*, from November, 1846, to November, 1849. The cases of typhoid fever—which disease is rarely absent for a fortnight from the wards of the hospital—preserved their symptoms unchanged, and presented the same lesions, whatever the epidemic constitution that prevailed; the same is true of typhus fever. Cases of the latter disease are also rarely absent from the wards of the same institution. It is there common to see patients occupying beds side by side, and presenting respectively the well-marked characters of either disease.

“But to return to the particular cases here analyzed. Allowing to epidemic constitution all the power of modifying disease claimed for it by certain writers, it must be granted that whatever influence this epidemic constitution exercised over the group of cases without intestinal lesion, it ought to have exercised over the group of cases with intestinal lesion, because the cases of the two groups were scattered indiscriminately over the space of two years only. If, I repeat, the two affections were really the same disease, then the same epidemic constitution ought to have impressed on both the same general features, implanted in both the same local lesions, and given to both the same tendency to cadaveric changes, and this allowing for all the modifying influence which the accidental presence of the abdominal lesion in the one and its absence from the other group might have occasioned. The analysis of every symptom, and every lesion, shows that the two affections were not thus assimilated by the prevalence of any particular epidemic constitution. But if this epidemic constitution, by any stretch of the imagination, could be supposed to change from week to week, to cause the case attacked to-day to have typhus fever, the individual who takes the disease to-morrow to have typhoid fever, still, it could not account for the fact—as well established as any fact in medicine—that typhoid fever rarely, if ever, affects persons more than fifty years of age; while age exerts little influence in determining the occurrence of typhus fever.

“Thus, then, the assertion that typhoid fever is merely typhus fever modified by the prevailing epidemic constitution is as irreconcilable with facts as that the former disease is simply the latter with abdominal complication.

“To conclude—In the first of these papers, I proposed to examine whether typhoid fever and typhus fever differed from each other in the same way as small-pox and scarlet fever differed from each other; and, for the purpose of comparison, I laid down certain grounds, as those on which we founded our belief in the non-identity of the two last-named diseases. Those grounds were:—

“1st. In the vast majority of cases the general symptoms differ—*i. e.*, of small-pox and scarlet fever.

“[This holds equally true with respect to the general symptoms of typhoid and typhus fevers.]

“2d. The eruptions, the diagnostic characters, *if present*, are never identical—*i. e.*, in small-pox and scarlet.

“[The particulars detailed in the foregoing papers prove that this is as true of the eruptions of typhoid and typhus fever as of those of small-pox and scarlet fever.]

“3d. The anatomical character of small-pox is never seen in scarlet fever.

“[Just in the same way, the anatomical character of typhoid fever—*i. e.*, lesion of Peyer's patches and the mesenteric glands—is never seen in typhus fever.]

“4th. Both—*i. e.*, small-pox and scarlet fever—being contagious diseases, the one by no combination of individual peculiarities, atmospheric variations, epidemic constitutions, or hygienic conditions, can give rise to the other.

“[In these papers, I have not attempted to determine how far this holds true with respect to the diseases here treated: but I have considered it in a paper

read before the Medico-Chirurgical Society of London, December, 1849,* the contents of which I may anticipate so far as to state that, to my mind, the origin of the two diseases from distinct specific causes is as clearly proved as that scarlet fever and small-pox arise from distinct specific causes.]

"5th. The epidemic constitution, favourable to the origin, spread, or peculiarity in form, or severity of either—*i. e.*, small-pox and scarlet fever—has no influence over the other, excepting that which it exerts over disease in general.

"[The facts detailed in these papers prove that this holds as true of typhoid and typhus fevers as of small-pox and scarlet fever.]

"If, then, the above are the grounds—and, after mature deliberation, I am able to assign no others—for the separation of small-pox from scarlet fever, I think it is indisputably proved that typhoid fever and typhus fever are equally distinct diseases; not mere varieties of each other, but specifically distinct—specific distinction being shown in typhoid and typhus fevers, as in small-pox and scarlet fever, by the difference of their symptoms, course, duration, lesions, and *cause*.

"Before closing these papers, I ought to observe that, with respect to some secondary points—*e. g.*, the chronological relation between the laryngeal and pharyngeal affections—it may be considered that I have drawn general conclusions from a too limited number of facts. But a few facts, impartially observed, minutely recorded, and carefully analyzed, are, I believe, more likely to give correct results than a multitude of general observations; and moreover, I believe most men would be astonished, if they had in numbers all the cases of any given disease they had ever seen, yet concerning which they have generalized. The method I have adopted, however prolix it may be, however difficult to conform to, however tedious the details into which it leads, has this advantage, that, if the observer be honest and capable of noting what is before him, thinking men may judge of the value of his facts, the force of his reasoning, and the correctness of his conclusion; whereas general observations, while they are totally incapable of proving anything, are exposed to all the fallacies of definite statements, because the one, like the other, rests ultimately on the accuracy of the facts observed. If the observations, on which any reasoning is founded, be erroneous, no cloaking of those observations, in general terms, can render the conclusions correct. It has been objected to definite numerical statements, that they mislead the reader by an *appearance* of accuracy, in cases where there has been great inaccuracy in observation. This objection appears to me to lie against the condition of the reader's mind, and not against the method. For if the reader fails to examine, 1st, the trustworthiness of the author, and 2dly, the legitimacy of his conclusions, the fault is, obviously, mentally his own, and in no ways to be ascribed to the method. Because chemists have, by the imperfection of their analyses, arrived at incorrect conclusions as the ultimate constitution of various organic bodies, we surely would not have them henceforth confine themselves to the general impressions produced on their minds by a series of experiments or observations. The more complicated the problem to be solved, the more careful ought we to be that *every* step in its solution is made correctly. How complex questions, such as arise in medicine, are to be determined mentally—*i. e.*, without the aid of figures—by ordinary men, I am at a loss to conceive. Yet physicians think to solve, by mental reveries, problems in comparison with which the most difficult that the most renowned mental calculators ever answered were child's play; and not only do they think to solve these problems, but to carry in their minds for years the complicated materials by which they are to be solved.

"Who can tell what general statements are worth, without knowing on what evidence they rest? One man's many is another's few. Last month (Oct.), I saw thirty cases of fever—to me these were few; to men with smaller opportunities of observing that disease, they would have been many. One man's frequent is another's seldom."

[* An abstract of this paper is given in the preceding No. of this Journal, p. 384.]

15. *On the Treatment of Ague by a Single Dose of Quinine.*—Dr. C. PFEUFER states he has had many opportunities of treating this disease, and was formerly in the habit of prescribing from fifteen to twenty grains, in divided doses, in the intervals of the paroxysms. Latterly, he has given five-grain doses, until from forty to sixty grains were taken, and with great success. The number of patients having greatly increased, during the bivouacs consequent upon the revolutionary disturbances, the expense of so much quinine was found a serious consideration; and he determined to try whether, by a different mode of administration, less might not suffice; and, certainly, if the results he has arrived at are confirmed by others, he will have conferred no ordinary boon upon the distributors of charitable medical relief. He finds, indeed, not only that the expense may be vastly diminished, but the cure expedited and rendered more certain, by administering a *single ten-grain dose* (made into four pills, with ext. of *millefolium*), on a day free of fever. This dose is well borne, none of the inconveniences which result from the long-continued use of small doses, or the tinnitus, giddiness, &c., produced by very large ones, presenting themselves. The subsequent attack is weaker, and its successors still more so, the convalescent remaining in the hospital from four to eight days. A tabular view of the particulars of thirty-four cases so treated is given.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Henle and Pfeufer's Zeitschrift*, B. viii.

16. *Treatment of Phthisis.*—Dr. JAMES TRUMBULL, Physician to the Liverpool Infirmary, in a highly interesting paper in the *London Journal of Medicine* (Feb., 1850), makes the following observations relative to the means which have been thought to have some power in promoting the absorption of tubercle, and especially respecting the efficiency of cod-liver oil.

"Whatever," he says "may be the condition of the blood and of the capillary vessels, which determines the exudation or secretion of tubercular matter, there cannot be any doubt that debilitating causes, such as innutritious food, deficient exercise, and impure air, have a powerful influence in producing this disease. The researches which have been made in the present day in chemistry and physiology have tended more and more to prove the connection between deranged assimilation and many diseases; and in struma, Dr. Prout has observed that all the assimilating processes are at fault, but chiefly those which take place between the duodenum and the circulating system, and by which the chyle is converted into blood. It is also well worthy of notice, that tubercles may be produced in some of the lower animals by confining them in damp places, and feeding them on unwholesome food. This was done with rabbits by Drs. Baron and Jenner,* and by Dr. Carswell; and it is a fact of some importance, as well in reference to the curability of tubercular diseases by absorption as in showing the power of good alimentation, that the tubercular disease has been removed by feeding them afterwards on more nutritious food. In some kinds of insects, too, it has been found that a tubercular deposit may be produced by feeding them on bad food, and repeatedly plunging them in cold water. The same influences operate on man; for Dr. Baly† has shown that mental depression and confinement cause a remarkable increase in the mortality among the inmates of prisons, and that this is chiefly produced by consumption and scrofula. Such facts show us the importance of hygienic means of treatment; and, viewed in connection with the power of cod-liver oil in promoting the assimilation of the food, they prove to us forcibly the necessity of bringing the digestive organs into as healthy a state as possible, in order to effect the most perfect assimilation of light nutritious articles of diet.

"We have already shown that inflammation and tubercular deposition are allied processes; and the effect of local irritation, in producing pulmonary consumption, is exemplified in the frequency of the disease in persons whose occupations cause them to inhale silicious or metallic particles; and I have no doubt that the fact, noticed by Phillips, of consumption being most prevalent in towns, and scrofula less so, while the reverse occurs in the country, arises,

* BARON on Tubercular Diseases.

† Medico-Chirurg. Trans. vol. xxviii. 1845.

not as he supposes, from any difference between these diseases, but, in a great measure, from the inhalation of particles of dust and smoke determining the deposition of tubercular matter in the lungs instead of the external parts. In all our efforts to cause the absorption of tubercles, it must, therefore, be a matter of primary importance to prevent irritation, and to remove inflammation or congestion of the lungs by the usual means—local depletion and counter-irritation more especially. The action of all the depurating organs which purify the blood by removing from it the products of the worn-out tissues, should be promoted by the appropriate means; and, with the view of preventing catarrhal irritation at the earliest period, I believe that there is no means so effectual as washing the whole surface with tepid or cold salt and water, followed by friction, which excites the depurating function of the skin, fortifies it against the impression of cold, and acts as a general tonic.

“The condition of the blood, as ascertained by Andral, and subsequently by Becquerel and Rodier, furnishes another important indication in the treatment of phthisis, and one which has been found practically useful. In the earliest stage, and perhaps in some cases also before the formation of tubercles, the proportion of globules is below the healthy standard: as the disease progresses, the quantity falls; and in one case, Andral found the proportion as low as 72 parts in 1000 of blood. In this respect, consumption bears a resemblance to chlorosis, and in the diminution of the red globules, we have, in the one disease as well as the other, an indication for the employment of chalybeate tonics. I may here observe that, though we have this diminution of the red globules, we are seldom able to discover a loud continuous murmur in the veins of the neck, which is so common a sign in chlorosis. This difference I account for, from there being in chlorosis not simply a diminution of the red globules, but also an increase of the aqueous part of the blood. The veins are thus kept in a state of tension, which is favourable to the production of the venous murmur. In consumption, on the other hand, especially when the disease is in an active state, there is a diminution not merely of the globules, but of the whole quantity of blood in the system, which, with the relaxed state of the tissues arising from loss of flesh, prevent the degree of venous tension necessary for the full development of this murmur. When, however, the tubercular disease has become quiescent or has receded, I have sometimes observed the occurrence of a continuous murmur in cases where it had at first been absent; and this I have considered a favourable sign.

“In the preceding part of the paper, we have endeavoured to show that there are three ways in which recovery from consumption may take place: first, by the shrivelling of miliary tubercles; secondly, by the transformation of crude yellow tubercles into cretaceous or calcareous concretions; thirdly, by the healing of cavities. We have now, fourthly, to show that the results of treatment seem to prove that tubercles may be removed by absorption. We cannot, however, have ocular proof of this, and hence there has been doubt as to the possibility of the removal of tubercles in this way; but the facts I have still to adduce will tend still further to remove any doubt on this point.

“The remedies which, I think, have most claim to our attention as agents capable of promoting changes in tubercular matter, are *mercury*, *iodine*, the *alkalies*, and *cod-liver oil*.

“As *mercury* is unquestionably the most powerful remedy we possess for promoting absorption of the serous and fibrinous exudations of acute inflammation, we would naturally expect that it should have some power in causing absorption of tuberculous deposits; but it would seem that in proportion as they recede from and lose the characters of plastic organizable-fibrin, they are less under the sorbefacient influence of this remedy: and in ordinary cases of consumption, not distinctly produced by acute inflammation, mercury, though occasionally useful as an alterative, to promote the biliary and other secretions, is injurious when given so as to act upon the constitution—producing a debilitating effect, and hastening the softening of tubercles. In cases of chronic pneumonia, which hold an intermediate place between pneumonia and phthisis, I have employed the remedy in the latter way; and, if we had reason to believe that miliary tubercles existed in an early stage, I think we might be jus-

tified in using this remedy, with the view of promoting the mode of transformation described by Rokitsansky. The local application of mercury is a powerful means of causing the absorption of indurated swellings, as, for example, of the joints; and, as we are now able in many cases to arrest the constitutional disease in consumption, it becomes us to use every means likely to assist in the removal of the local disease also; and none appears likely to be of more service than mercurial inunction. Dr. C. J. B. Williams says that he has successfully treated several cases, in which the signs and symptoms left him in no doubt as to the existence of tuberculous peritonitis, by ointment of iodide of mercury to the abdomen, together with iodide of potassium internally.

"The preparations of *iodine* have some resemblance to mercury in their effects, but, unlike this remedy, they are not of any service in acute disease, but are more useful in causing the absorption of tubercular deposits, especially in glandular structures. The syrup of the iodide of iron is the preparation I have most frequently used, as it combines the absorbent properties of iodine with the tonic power of iron, and thus fulfils the indication in reference to the diminution of the globules of the blood. I regard it as one of the best tonics we can use in the early stage of the disease, and I think that I have seen the early symptoms of phthisis arrested by it in a few cases. It was, during last summer, the chief means of restoring to health a young gentleman, who, in addition to cough, and loss of flesh and strength, presented the signs of incipient tubercular deposit at the summit of the left lung—very slight dullness, with some sibilant rhonchus. I prescribed it with very good effect in the case of a lady about thirty years of age, who came from some distance in the country to consult me, in July, 1847. She had become thin and very liable to colds, and had some mucous expectoration. She had also had an attack of spitting of blood three years previous. Some consolidation at the upper part of the right lung was indicated by slight but distinct dullness on percussion close to the sternum, and increased loudness of the cough and voice in the same spot; but there were no mucous or other rhonchi. She wished to remove to the South of England; but as the disease did not seem in an active state, I recommended hygienic means of treatment, to improve the general health. I also ordered syrup of the iodide of iron, with tincture of hyoscyamus in infusion of calumba, and inunction of iodide of lead ointment below the right clavicle. When I again saw her, five or six weeks after, I found her improved in health; and the signs of consolidation appeared, both to her ordinary medical man and myself, to have diminished considerably. She has since then enjoyed pretty good health, and has had two children, but during last pregnancy there was some return of hæmoptysis. After this she took cod-liver oil for a considerable time, with benefit. The iodide of lead ointment I have used in other cases besides this, with the view of causing absorption of tubercular deposits in the lungs, on the same principle on which we use it in scrofulous glandular swellings. I think it better suited to produce such an effect than the application of a concentrated tincture of iodine, which is a powerful counter-irritant, and as such has been found 'remarkably beneficial' at the Hospital for Consumption.

"Before the introduction of iodine, the *alkalis* were regarded as remedies of considerable absorbent power. *Liquor potassæ* is a powerful alterative medicine, and it has sometimes been found to cause absorption of an enlarged gland even after iodine has failed. Dr. Campbell recommended it very strongly in phthisis; and Sir J. Clark has observed that the alkalis increase the urinary, and appear to promote the bilious secretion, and to render that of the mucous membranes more fluid: in whatever way they operate, they are certainly beneficial in many tuberculous affections.* Their power of promoting absorption of lymph and other exudation products of inflammation of the lungs or pleura, especially when combined with iodine, is a fact of acknowledged practical value. Dr. Golding Bird† has communicated some most interesting and useful information as to the action of alkaline remedies; he calls them depurating or chemical diuretics, and has shown that, unlike most diuretics, they increase not only the fluid, but also the solid parts of the urine. This they do by a chemical ac-

* Treatise on Pulmonary Consumption.

† Lectures on the Influence of Researches in Organic Chemistry on Therapeutics.

tion on the exhausted and worn-out tissues; and he thinks that parts of low vitality, such as tubercle, will be most readily acted on by these chemical agents. It is also worthy of notice, that the caustic alkalis are the most powerful solvents of tubercle; and it is therefore reasonable to suppose that they will retain a portion of that power, when circulating with the blood in the capillaries.

"*Cod-liver oil* has been known as a remedy for consumption and scrofula in Germany and the north of Europe for a considerable period, and Dr. Hughes Bennett* has the merit of having brought it into notice in this country. Of the three kinds of oil, the pale, the light brown, and the brown, it has been thought in Germany that the darkest coloured is the most useful; and this opinion was supported by Dr. Bennett, and is still maintained by Dr. De Jongh. It seems, however, to be now sufficiently well ascertained that the brown has no superiority over the pale oil. I have seen the best effects speedily produced by the purest specimens of pale oil. Dr. Williams used the pale oil prepared according to Donovan's method: and in the report of the Hospital for Consumption, it is stated that 'different qualities of oil have been tried without exhibiting any marked difference in the remedial effects; but the offensiveness of some of the darker kinds renders their general use impracticable.'

"The power of this remedy in controlling the progress of phthisis in a large proportion of cases, and even of arresting its progress in not a few, has now been completely established; and the Hospital for Consumption has even furnished us with statistical facts as to the results of treatment in each stage of the disease.

"In Dr. Bennett's work, we are furnished with three cases, fully detailed, of decided consumption, where recovery took place under the use of this remedy. In the appendix to the last edition, he says: 'I have succeeded, in several cases, in ascertaining that the caverns have completely healed up, every symptom and physical sign indicating their presence has disappeared, and there has remained only slight dulness on percussion, and increased vocal resonance, as a proof of the puckering and induration of the pulmonary parenchyma attendant on the cicatrix.' In proof of this statement, he relates two other cases. The most favourable account that has yet been given of the efficacy of cod-liver oil is that published in this Journal, by Dr. C. J. B. Williams, who states that of 234 cases of which he kept a record, there were no fewer than 206 in which its use was followed by marked and unequivocal improvement. The most numerous examples of decided and lasting improvement occurred in those cases in the second stage, where the tubercular matter was beginning to soften. He has given a full account of eleven cases in the third stage, the results of which may be stated as follows: In one case, a cavity seemed to have healed completely; in five, all the symptoms were removed and recovery took place, but dry cavities remained in the lungs; in one, it seemed probable that the restoration was even more complete; in one case, that of a child, recovery took place, but the existence of phthisis was somewhat doubtful; in one, the advance of the disease was stayed; in one, the patient recovered so far as to marry, but relapsed; and in one, after temporary recovery, the patient died.

"From the report of the Hospital for Consumption, it appears, that this remedy has been productive of more good in the treatment of phthisis than any agent yet employed; and the results furnished by a table of 542 cases in which it was given, are highly interesting. The collective results in all the stages show, that in 63 per cent. the symptoms improved; in 18 per cent. the disease was arrested; and in 19 per cent. only it went on unchecked. The report observes that when it is recollected that of the whole number treated at the Hospital, the disease was arrested in only 5 per cent., the value of this remedy, under which the disease was arrested in 18 per cent., must be considered very great. Dr. Williams speaks most favourably of the oil in the second and third stages, observing that, though not less satisfactory in the first than in these, it is slower in its action. This report, however, establishes the fact which we might naturally expect—that the greatest number of cases are arrested in the first stage. In nearly 18 per cent. of the males, and in 28 of the females, in the first stage,

* Treatise on the Oleum Jecoris Aselli. 1841.

the disease was arrested ; that is, in 293 cases of both sexes, it was arrested in 23 per cent. It was arrested in 14 per cent. of the cases of both sexes in the second and third stages.

"What I have seen in my own practice fully confirms these statements ; and in two of the cases which follow, II. and III. the symptoms and physical signs showed as hopeless a condition as in any cases of consumption I have ever seen, and indicated a speedily fatal termination, which, I am persuaded, nothing that we are yet acquainted with, except this remedy, could have averted.

"Cod-liver oil has been called a tonic remedy, which it undoubtedly is ; but it differs from other tonics, and indeed from most other remedies we are in the habit of giving in this disease, in one important respect—that we may use it with advantage in every stage, and that there is scarcely any symptom which contra-indicates its employment. In general, the appetite speedily improves, the cough abates, the hectic fever diminishes, and the perspirations are arrested. The patient at the same time improves in colour, and gains strength and flesh. There are very few cases in which the pale oil cannot be taken ; and if we begin with a tea or dessertspoonful, and gradually increase it to an ounce thrice a-day, on the surface of peppermint, water, or milk, there are few persons who do not take it with facility, and become reconciled to it. When it causes nausea, naphtha or hydrocyanic acid will usually remove this symptom. We must not, however, trust exclusively to this remedy, but must give due attention to those general indications for treatment which have been pointed out. We should also remove any urgent symptoms, such as cough, by a sedative ; and morphia is one of the best, given either in simple oxymel, or oxymel scillæ, where an expectorant is required. Local inflammatory action must also be removed by the usual means. Unless we are thus careful in removing prominent symptoms, and in bringing the digestive organs into a healthy state, so that the oil may be assimilated, we may fail in deriving from the remedy the benefit which it is capable of producing under judicious management."

17. *Cicatrices in the Lungs*.—DR. W. T. GAIRDNER produced at the meeting of the Medico-Chirurgical Society of Edinburgh, March 20th, 1850, a number of specimens and drawings, illustrative of the effects of tubercular softening, ulceration, pulmonary apoplexy, and gangrene in the lungs. When cure followed any of these lesions, the appearances found after death were so nearly identical, that, from simple inspection of the parts, it was often impossible to draw any just conclusion as to the nature of the disease under which the subject had originally laboured. Dr W. G. expressed his belief that some specimens, generally regarded as illustrative of bronchial dilatation, were, in fact, examples of cavities resulting from gangrene or ulceration of the lungs.

Dr. Bennett fully agreed with Dr. Gairdner that in the lungs, as elsewhere, problematical appearances were often found. To solve the doubt in such cases, it was necessary to associate the history of the symptoms during life with the lesions observed on dissection. Cretaceous concretions were not exclusively observed in the lung after the removal of tubercle ; any deposit might become loaded with salts, and dry up. The position of such concretions often afforded some clue to their probable origin. There were, however, intermediate cases, in which the precise nature of the lesion could not be made out, even with the assistance of the microscope.—*Monthly Journal Med. Science*, May, 1850.

18. *Clinical Remarks on Gangrene of the Lungs*. By WILLIAM STOKES, M.D. (*Dublin Quarterly Journal*, February, 1850.)—In this interesting paper on one of the most terrible and unmanageable of the diseases of the lungs, the author presents the following conclusions as justifiable in the present state of our knowledge of the subject.

"1. That gangrene of the lung is met with under a variety of forms, differing from one another not only in the duration and violence of the symptoms, but also in their relations to various local and constitutional diseases.

2. That in a great proportion of the cases, the disease is attended with putrefactive action engaging the necrosed portion of the lung, and affecting its secretions.

3. That, in the progress of a case, we may observe the septic action singularly variable. It is increased by over-stimulation of the system.

4. That we cannot explain the symptoms in many cases of this disease, without assuming, either that a spot of mortification, so small as to be undiscoverable by physical means, causes severe symptoms, and is attended with super-secretion; or that a process of putrefactive secretion precedes, in many cases, the death of the lung.

5. That pain of the most extreme kind may attend this disease; and, in the remittent form, appear on each access of the affection with unmitigated violence.

6. That the contact with air is not necessary for the formation of a gangrenous eschar or cavity.

7. That hœmoptysis commonly attends each access of the remittent disease.

8. That, in the earlier periods of this disease, auscultation and percussion often fail in detecting any signs of organic change: or, if such is discovered, it appears incommensurate with the gravity of the symptoms.

9. That, in many cases, the evidences of congestion and parenchymatous infiltration seem to follow rather than precede the symptoms of gangrene.

10. That dextrocardia, from diminished volume of the lung, may occur in gangrene of the right lung.

11. That gangrene may attack a lung previously hepatized from ordinary inflammation, or in a chronic tubercular condition.

12. That from the pre-existence of signs and symptoms of the stages of pneumonia, or from the early appearance of signs of excavation, we may be able to distinguish between fetid abscess of the lung and gangrene.

13. That, in certain cases of chronic bronchitis, the breath and expectoration may become fetid, and yet no gangrene appear to have formed.

14. That the diseases with which gangrene may be found complicated are divisible into general and local affections; but that its occurrence in the class of general diseases, termed putrid or asthenic, is much more rare than might be expected.

15. That it is rarely observed in the typhus fever of this country, even where the secondary bronchial affection is intense; but that in typhoid pneumonia it may be occasionally observed.

16. That it may complicate a previously existing disease of the lung, such as pulmonary tubercle, or an unresolved hepatization.

17. That it may be directly induced by the pressure of a tumour on the nutritive vessels and nerves of the lung, so that, in cases of cancerous or aneurismal tumour, the patient may die, not from the extension of the original disease, but from its inducing a rapid mortification of some portion of the lung.

18. That the disease, though always of a formidable character, is not necessarily fatal."

19. *Case of Communication between the Rectum, Bladder and left Ovary; Calculus in the left Kidney; great Enlargement of the Liver, with lateral Curvature of the Spine.* By T. P. HESLOP, M. D.—Catherine Everall, aged 37, married, was admitted into the General Hospital, Birmingham, on the 22d of June, 1849, under the care of Dr. Johnstone, an extremely emaciated woman, with a countenance indicative of intense suffering. She had been a patient twelve months previously in the hospital, and found so much relief that she insisted upon being brought again, though it was obviously only to die. At the former period she complained of extreme pain in the left lumbar region, and passed a large quantity of purulent urine. This latter symptom appears to have existed for several months previously. About the time of her last admission the menses disappeared, and never since recurred. Many years before, two stones were extracted from the bladder at the Shrewsbury Hospital, of which I have been unable to learn more than that they were smooth, round, and of great beauty, insomuch that they were kept for a long time as interesting curiosities by the friends of the patient. When in the hospital, she appeared to labour under such marked symptoms referable to the bladder that Dr. John-

stone directed it to be sounded, but no calculus was detected. Up to the period of her present application to the hospital, she has had great difficulty in passing urine, and endured severe pain until she succeeded. Her husband informed me that she averred she had passed air from the bladder for at least twelve months, and that it was her opinion that the air prevented the evacuation of its contents, and this expulsion of air always produced marked relief. She appears to have had the belief that the urinary and faecal passages communicated, and was never able to account for the curious odour and appearance of the discharges from the urethra. She told her husband that her spine began to yield at the age of 14, which she attributed to over-exertion in carrying her younger brothers and sisters. She never had children, and has never had an attack of jaundice.

She suffered such extreme exhaustion from her journey (a distance of fourteen miles), that it was found impossible to make a very accurate examination of her condition. She was ordered good diet, wine and quina with sulphuric acid. On the evening of the 25th she had an exacerbation of pain; the countenance assumed the hippocratic character; while the strength was evidently failing fast. The pain was exclusively confined to the left posterior lumbar region, and coursed down the left iliac to the hypogastric region. These portions of the abdomen were exquisitely tender to the touch. There was a clear sound on percussion over the last-named regions, but the lumbar region was perfectly dull; here there was distinct evidence of fulness also, but somewhat undefined. The right half of the abdomen was tense and absolutely dull on percussion, extending from the ribs nearly to the crest of the ileum. The limits of this, the hepatic tumour, were easily definable both by touch and percussion. The wine was increased, but she sank during the night. She passed purulent urine up to the time of her death.

Autopsy.—Head not examined.

Thorax.—Nothing worthy of note was observable in the lungs and heart. The right pleural cavity was diminished to a remarkable degree by curvature of the spine, commencing at the dorsal vertebrae, its greatest convexity ending at the base of the thorax. The dorsal portion of the spine presented curvature, to a less degree, to the other side.

Abdomen.—On opening the abdomen, the liver was seen to occupy its entire right half, sweeping below the umbilicus to the right posterior lumbar region; its posterior border deeply notched by the spine; its inferior surface strongly marked by the kidney and colon. Its consistence was much firmer than natural; it felt almost dry, and cut like brawn, its general aspect being that of a *waxy* liver, with solid fat deposit. The left kidney was fully one-half larger than its natural size. On being carefully cut open, small abscesses were found throughout its substance; and several ounces of pus came from the immensely dilated pelvis. The infundibula were loaded with calculi, accurately moulded to their form; some of these reached the calyces. The head of the ureter partook of the dilatation of the other renal passages, and was occupied by a calculus as large as a walnut, so closely impacted that it was only after some manipulation a probe was made to pass into the pelvis of the organ. The ureter below this point was not dilated to a marked degree. On proceeding to examine the pelvic organs, a tumour about the size of an ordinary orange was seen occupying the position of the left ovary. The adhesions between this body, the rectum and bladder, were so intimate that all these organs were taken out together and carefully dissected. Upon opening the bladder, which was of moderate dimensions, considering the age and sex, a minute hole was noticed in the left angle of its superior fundus. The mucous membrane around was minutely granular and stained of a dark slate color; a probe was found to pass with the greatest facility from this point into the head of the rectum, which strongly adhered to the upper back part of the bladder. The tumour mentioned was found to be the left ovary enlarged; externally, its color was bright brown, its consistence obviously less than *small* ovarian tumours in general. A soft, pultaceous, half-faecal, half-caseous-looking matter was contained within it, which was found to communicate with the rectum, or, more correctly,

with the lower anterior portion of the sigmoid flexure of the colon, adherent to the tumour. This communication was evidently out of the direct course of the intestinal contents, from the presence of bands and folds in the cavity of the gut, both below and above the opening of communication. The finger *could* be passed along the bowel without passing into the abnormal communication and *vice versâ*. The recto-ovarian did not correspond exactly with the rectovesical opening, the latter being a little lower in the pelvis, but all were matted together. The remaining abdominal and pelvic viscera were healthy.

The morbid appearances found in the pelvis in this case are, as far as I know, unique. It is difficult to understand how this poor woman sustained life so long with such an amount of disease going on in the abdomen. Nor is it by any means easy to give a decided opinion as to the nature of the ovarian tumour. There was no evidence of tubercle or cancer, the two most common causes of abnormal communication between the various organs of the body. Perhaps the only explanation that can be offered is, that a slow process of inflammation had been for a long time silently throwing out its characteristic exudations, and gradually glueing together those organs lying nearest to the great permanent lesion of the left kidney, by a *selection* too obvious to require further mention; upon the adhesion followed the ulcerative process, and so ensued the remarkable appearances discovered after death. It is impossible to imagine that the communication between the ovary and rectum could have existed long; for although, from the peculiar anatomical character of the former, the cavities of these organs did not communicate *freely*, and the existence of a great pus-discharge from a neighboring organ might have tended to check it, irritation must have been produced in no long time after the connection, sufficient to cause ovarian suppuration, with pelvic abscess.

It will be observed that the account of the woman passing air, if not fæces, from the bladder, was obtained after her death from her husband. We must take such observations with caution, although these inquiries were made with scrupulous care; and in further proof of the correctness of his answers, I may add that the poor woman had frequently attempted to describe her sensations and notions to her medical attendants, who treated them with incredulity.—*Dublin Quarterly Journal*, Feb., 1850.

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20. *Granular Corpuscles in the Encephalon and Spinal Cord of Hemiplegic Patients.*—Dr. LUDWIG TÜRCK has described the microscopic appearances presented by the brain and spinal cord of three hemiplegic patients. His observations tend to show the necessity of employing other means than the unaided eye, in the investigation of parts supposed to be the seat of disease. We not unfrequently hear of *post-mortem* examinations, especially of the nervous centres, in which no morbid appearances have been detected either by the eye or by feel. The state of the brain or spinal cord is also often vaguely described as being “somewhat hardened,” “of rather firmer consistence than usual;” and nothing more is said about the subject. Now we have no doubt, that if a microscopic examination were made in such cases, we should often find unequivocal proofs of disease. The first and second of the cases related by Dr. Türck entirely prove the correctness of this assertion. In them, the spinal cord was apparently healthy, and of proper consistence; but when examined with the microscope, was found to be the seat of disease.

CASE I.—The first case was that of a woman aged 73, who had had paralysis of the left side for six months. There was an apoplectic cyst on the outer side of the right corpus striatum and optic thalamus, with white softening of the latter; and numerous granular corpuscles (*körnerkörperchen*) were met with as deep as the crus cerebri. The spinal cord appeared healthy to the naked eye; but on dividing it into its lateral halves, it was found, under the microscope, to contain a large number of sinular bodies. The left lateral half contained a large number, while they were much fewer on the right side. Dr. Türck then made fine vertical sections from without inwards; and found that the most superficial sections on the left side showed the granular corpuscles in great number, while in a similar situation on the right side they were entirely absent, and only began to appear singly towards the middle line. From this

examination, the interesting result was brought out that the disease in the cord was limited to the same side as that on which the paralysis had existed—the opposite side to that on which the brain was diseased.

CASE II.—The second case, was that of a man, forty years of age, who had laboured under paralysis of the right side for half a year. There was an apoplectic cyst in a similar situation to that mentioned in the first case; the right thalamus had undergone white softening as deep as the crus cerebri, and presented an abundance of granular corpuscles. The pons Varolii, which was not examined in the first case, also contained them; the medulla oblongata presented them in abundance on the right side, but more sparingly on the left; and on the left side of the spinal cord they were very abundant, while they were wanting on the right. From the pons downwards, all the parts were of normal consistence, and appeared to the naked eye to be healthy, both entire and in section.

REMARKS.—Two explanations may be given of the origin of these bodies. They either arose from an extension of the disease from the crus cerebri downwards, or they were the effect of the hemiplegia produced by disease of the brain, which induces a process of exudation in one-half of the spinal cord. As to the first of these suppositions, it is difficult to understand why the extension of the disease should be confined to one side, and especially why it should not have extended to the opposite side at the point of decussation. With regard to the second explanation, it is to be observed, that in both cases there was a high degree of paralysis of motion, while sensation was but little affected: and hence, if this explanation be adopted, the exudation process would have to be considered as having a connection with paralysis of the motor elements.

In several other cases of hemiplegia, from cerebral diseases, the spinal chord has been found healthy.

CASE III.—The third case is one of a woman, forty years old, who had had hemiplegia of the left side for a year and three-quarters. The upper extremity was perfectly paralysed; the lower one less so; sensibility appeared normal. There was an old apoplectic cyst in the right corpus striatum and optic thalamus. Numerous granular corpuscles were observed, which rapidly decreased in proceeding downwards; so that the right crus cerebri, the pons Varolii, the medulla oblongata, and the upper sections of the left half of the cervical portion of the chord, only presented them singly. They were much more numerous from the origin of the third to that of the seventh cervical nerves. From this point downwards, they again decreased, but at the lower part of the dorsal portion again began to increase, until they reached their maximum at the origin of the lumbar nerves. From this point they again diminished, and at the origin of the lower sacral nerves they entirely disappeared. The nerves on the diseased side were found perfectly free from the corpuscles, even a few lines from their origin. The right half of the spinal cord presented them only in the middle line, the medulla oblongata only a very few: the left half of the pons, as well as the left crus cerebri, contained none.

The fact that in this case the disease was not equally extended, the parts between the shoulder and hip joints as well as that between the brachial plexus and the encephalic cyst, showing very few of the corpuscles, tends to point out that the disease of the spinal cord cannot be considered as an extension of that which existed in the brain.—*London Journal of Medicine*, April, 1850, from *Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*, January, 1850.

21. *Cryptogamic Vegetations in the interior of the Hair in Favus*.—DR. C. WEDL has published an account of his having discovered cryptogamic vegetations in the interior of the hair in favus. After briefly referring to the observations of Gruby, Günsburg, Malmsten, and Lebert, he says:—

I directed my attention to the interior of the hair, making use of a concentrated alkaline solution to render it more transparent. This solution acts on some parts of the hair in a very remarkable manner; in different strata of it, there appear small elongated gas-bubbles, with a sharp dark outline, giving the appearance of an interrupted canal; sometimes also larger gas-bubbles are

seen lying at the outside of the hair. The latter gradually becomes more transparent; and, in the situation of the dark broken canals, there appear filaments formed of elongated quadrangular or roundish molecules; these extend through a certain portion of the hair, here and there giving off branches, and are to be found in all layers of the hair. These filaments consist of granules arranged like beads. Their transverse diameter varies; their length is also very variable; here and there, only a few granules are linked together, while in other parts there are several dozens of them. The branches which spring from them are sparse, generally very short, and always single; the direction of these filaments is in the longitudinal axis of the hair. I have never seen them hanging from the outside, unless I had torn the sheath of hair, or the whole hair, by rubbing it to and fro on the glass, after it had been acted on for an hour by strong liquid potassæ. On the surface, one often indeed sometimes sees regularly arranged filaments surrounding the hair; but the most beautiful and conspicuous are these transverse granular filaments, at the place of exit of the hair from the epidermis. In the latter, which often remains hanging when the hair is torn out, are usually some pretty numerous groups of granules (sporidia), and here and there a granular filament comes into view, which passes transversely across the hair, or even seems to end in it.

I could not ascertain with precision the entrance of the filaments of the dependent epidermis into the hair; but I have no doubt that such is the case, because these granular filaments are most abundant at the above-mentioned point of exit; moreover, they decrease as they proceed upwards, and disappear at the end of two or three lines; they extend some way down, but not in such numbers, and do not seem to reach the bulb. The point of concentration of these filaments is, then, the place where the hair emerges from the epidermis; it is here surrounded with the vegetations of favus. In order to establish the fact that the filaments in the hair are really fungous growths, it is necessary to examine fungi, but especially those of favus, under the action of strong liquor potassæ. There also is an extrication of gas under the microscope; the sporidia and thallus fibres are not dissolved, but are rendered more conspicuous, while the epidermis cells become faint. Dr. Hebra perceived the development of a fetid gas in his researches, when fungi were exposed longer than usual to the action of liquid potassæ.

With regard to the frequency of this appearance, it is to be observed that in most cases of favus, it is possible to find these fungi in the hair, especially when light. When it is dark-coloured, it requires to be macerated about half an hour in strong liquor potassæ; but in light hairs, the sporidia can be seen in from five to ten minutes.

This remarkable circumstance—the growth of fungi in the interior of the hair in favus—gives an explanation of its well-known dryness and brittleness, for the nutrition of the hair must be interfered with by the parasitic structures. Moreover, these observations throw light on the long known rule in dermatology, that, in order to cure favus effectually, the hair must be removed. *London Journ. Med.* March, 1850, from *Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien*. 1849.

22. *On Anemia from Diminished Proportion of Albumen in the Blood, and on the Dropsies which it occasions.* By MM. BECQUEREL and RODIER.—The following are the conclusions appended to the memoir on the above subjects, published in the *Gazette Médicale de Paris*, No. xv., 1850.

1. Besides the form of anemia which results from a diminution in the proportion of the blood corpuscles, we must acknowledge the existence of another pathological condition, characterized by the low proportion of the albumen of the serum.

2. This diminution of the albumen of the serum may be rapidly produced; it is then announced by paleness, by a yellowish tint in the complexion, by great debility, and, above all, by general anasarca, without albuminous urine.

3. A great number of acute dropsies, which, at the present time, are regarded as special diseases (*essentiell*es), ought obviously to be attributed to this pathogenic cause.

4. The diminution in the albumen of the serum may also be *slowly* produced; it then constitutes a chronic pathological condition, which betrays itself by certain symptoms—the pallor and yellow tinge of the face, extreme debility, and, finally, general dropsy, more or less considerable, without albuminous urine.

5. The greater proportion of the dropsies which used to be considered *essential and passive*, may be referred to the preceding section.

6. Diminution in the amount of the albuminous constituents of the serum, whether produced by an acute or by a chronic process, is quite independent of the diminution of the amount of blood globules. These two alterations of the blood are, however, very frequently found to co-exist, and sometimes the one, sometimes the other, predominates.

7. A diminution in the proportion of the blood globules is incapable of inducing dropsy, unless associated with diminution in the proportion of the albumen of the serum.

8. The additional symptoms which are superadded to those above mentioned, when diminution of the blood corpuscles complicates the case, are, a “bruit de souffle,” with the first sound of the heart, a continuous “souffle” in the jugulars, or an intermitting one in the carotids, dyspnoea, and palpitations.

9. The causes capable of determining the slow and chronic loss of the albumen of the blood are insufficient alimentation, considerable losses of blood, long-continued diarrhoea, the influence of terrestrial miasmata, &c.

10. The production of the same effects under the influence of organic diseases, such as heart affections, or granular disease of the kidney, constitutes a true cachectic condition, a cachexia.

11. The pathological condition to which the term cachectic is generally applied, is nothing but the assemblage of symptoms resulting from diminution of the albumen of the serum, united or not with some diminution in the amount of blood corpuscles. The first of these causes accounts satisfactorily for the frequency of dropsies in such cases, for the discoloration of the skin, and for the extreme state of weakness likewise described. The second explains the “bruits,” cardial and vascular, the dyspnoea, palpitations, &c.

12. The preceding distinctions exercise an important influence, and ought to be taken into consideration, both in diagnosis, prognosis, and in the treatment of dropsies.

[MM. Becquerel and Rodier, in the preface to their essay, mention that diminution in the albuminous constituents of the blood was first observed, in connection with Bright's disease, by Drs. Gregory, Christison, and Bostock. The accuracy of their observations was confirmed by subsequent analyses by Rayer, Andral, and Gavarret, and the authors of the essay themselves. We cannot subscribe to the whole of the twelve conclusions above given. Acute general dropsy, without albuminous urine, disease of the heart, &c., is, in our experience at least, a very rare affection, and there is, we think, no reason to doubt that organic diseases, obstructing the circulation, may induce anasarca, without the intervention of the cachexia from diminished albumen. But we acknowledge that, for the explanation of certain chronic oedematous conditions often observed in the progress of phthisis, during convalescence from typhus, from ague or dysentery, in chlorotic females, &c., the theory of MM. Becquerel and Rodier seems well adapted. We must object to the doctrine which connects the venous murmurs of anemia with diminution of the blood corpuscles, believing that there is not a particle of physical evidence to justify the authors in adopting it. True, analysis in such cases shows a small proportion of blood corpuscles, but how the impoverished condition of the blood operates in producing the sounds is unexplained, and by chemistry, of course, inexplicable.] *Monthly Journal of Medical Science*, May, 1850.

23. *On Chlorotic Tinnitus*.—From time to time, for years past, Dr. FRORIEP has met with, in delicate yet florid-looking girls, *tinnitus aurium* in various degrees, oftentimes accompanied with a considerable difficulty of hearing. He long treated these cases with every variety of means, without any good results. Bearing in mind, then, that symptoms of apparent congestion in chlorosis are

so beneficially treated with iron, he employed it in these cases, whenever the general condition and the white lips and gums, in even fresh-coloured countenances, seemed to indicate a chlorotic basis in the disturbance of the health; and he is very anxious to impress on practitioners the great benefit that ensued. No disease is more common than chlorosis, and none so often mistaken or overlooked in some of its forms, so that many young women lose several of the best years of their lives, merely because ferruginous preparations have not been administered for a few months.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Froriep's Notizen*, Bd. x.

24. *Chemical Researches on the Nature and Cause of Cholera.* By R. D. THOMSON, M. D., of Glasgow. (Proceedings of Royal Medical and Chirurgical Society, Jan. 22d, 1850.)—In the first part of the paper, the author detailed the results of chemical analyses of the blood, urine, and intestinal discharges, in the cold, or “lymphatic,” stage of cholera; and in the “biliary,” or febrile stage. The main results arrived at were—1. That in the cold stage of the disease, the specific gravity of the blood, and of the serum separated from the clot, is increased; that the proportion of water is less than in health, by at least nine per cent., and in some cases by as much as seventeen per cent.; that both the organic and the inorganic components of the blood are proportionally increased in amount; but that the increase of the insoluble salts is much greater than that of the soluble. 2. That the intestinal discharges, in the cold stage, when of the true “rice-water” character, resemble closely, in their chemical composition, the fluids of hydrocele and hydrocephalus; that their flocculi are formed of epithelial scales, and the watery part of water, containing a small portion of organic matter (albumen) and salts (chloride of sodium, carbonate of soda, earthy phosphate, alkaline sulphate, and some lime). 3. That the small quantity of urine sometimes found in the bladder, in this stage, presented no apparent aberration from an ordinary standard. 4. That in the biliary, or febrile stage of cholera, the blood soon regains its normal proportion of water, or even an excess of it; and that the other constituents resume their natural relation to each other. 5. That the urine, in the biliary stage, in several cases contained albumen, but presented scarcely any other deviation from the urine of health, except in the amount of urea, which at first was deficient.

In the second part of the paper, the author described some experiments, instituted by him, with the view of determining whether any poison could be detected in the atmosphere. In one series of experiments, it was ascertained that no solid matter existed in the air; but ammonia was obtained from it in the proportion of 0.319 grains of caustic ammonia, or 0.731 grains of carbonate of ammonia to 1,000 pounds of air. By another series of experiments, it was determined that no carbon or hydrogen existed in the atmosphere, except in the states of carbonic acid and water; while carbonic acid was obtained in the proportion of one volume to 6,650 volumes of air.

The author inferred that *the cause of cholera is not a specific tangible poison introduced into the body from without, but rather a vicarious transference of the cutaneous excretion to the intestinal mucous membrane, dependent partly on atmospheric influence, and partly on a predisposing state of the system in those who are affected with the disease.*

DR. BALY said that the author's hypothesis of the cause of cholera was not supported by the phenomena of the disease; for not only would the suppression of the cutaneous and pulmonary exhalations, and the transference of the fluids normally excreted by the lungs and skin to the intestinal mucous membrane, be inadequate to produce the enormous discharges which drain the system of its fluids; but it is a fact that the cutaneous exudation is, in many of the worst cases of cholera, greatly increased, a watery fluid being in these cases poured out by the whole surface of the skin, as well as by the mucous membrane of the intestines. The draining away of the watery part of the blood was certainly the main phenomenon of the disease, all, or nearly all, the others being secondary to and dependent on it. It undoubtedly was the cause of the coldness of the body; but it prevented the development of animal heat; not, he thought, by rendering the blood thick, and thus incapable of circulating quickly, as

suggested by Dr. Snow, but by rendering impossible those chemical changes which normally go on in all parts of the capillary system, and which are the source of the animal heat. The circulation in cholera is undoubtedly much retarded; but the rapidity with which the nervous system of the patients is affected by chloroform, inhaled into the lungs, shows us that the motion of the blood would still be sufficient to allow of some evolution of caloric, if other necessary conditions were present; but an essential condition for the normal processes of nutrition, and for the chemical processes on which the temperature of the body is dependent, seems to be the presence of a certain proportion of water in the blood; and it is most probably because this is wanting, that the body becomes cold. To the same causes are obviously to be ascribed the arrest of the natural secretions of the liver and kidneys, and the depressed state of other organic functions of the body; and even the remarkable condition of the mind, and of the sensitive and motor functions—their state of comparative integrity—not only affords evidence that the nervous and muscular systems are, in a great measure, independent of the watery part of the blood, so essential to the organic functions, but is itself a result of the loss of that part of the circulating fluid. Under ordinary circumstances, if the respiration continued so imperfect, and the secretion of urine were suspended for a long period, as they are in the cold stage of cholera, the blood would become charged with carbonic acid and urea, and coma would result. In the cold stage of cholera, the natural chemical processes of the body are brought nearly to a stand-still, by the loss of the water of the blood, and neither urea nor carbonic acid is formed in large quantity; the powers of the mind and of voluntary motion are therefore left comparatively unimpaired.

Mr. W. F. BARLOW could not discover how failures to demonstrate any poison in the atmosphere could lead to inferences of its non-existence. Probably it was so subtle as to defy all scrutiny. Could the poison of small-pox or scarlatina be demonstrated in the atmosphere? Yet, was there any doubt that the air could be made infectious by, and could communicate, those diseases? He had paid some attention to the state of the muscles in cases of cholera. Nothing was more marked than the extreme excitability of the muscles during life, and their extraordinary manifestation of irritability after death. The facts which related to these points were most obvious; but as to the causes of them, there were so many difficulties in the way of satisfactorily accounting for them, that he begged the few words which he had to offer might be viewed as suggestive, and not positive. The condition of the blood must be considered, if we would even approach a rational conjecture on the state of the muscles. It seemed pretty clear that there was a great defect in the formation of carbonic acid, in cases of cholera, and therefore in the production of animal heat. He had listened with interest to what had fallen from Dr. Baly respecting the failure of chemical changes in the blood, and their consequences. There appeared a broad difference between death in the collapse of cholera and death by asphyxia, as ordinarily considered; in the latter, noxious blood circulated, and impaired the irritability; but in the former, carbonic acid could not be carried freely through the system; if it were, coma would follow, and the heart's action would cease, even more quickly than it was observed to do. The elevation of temperature after death is very difficult to explain. It does not depend on the post-mortem muscular contractions, because extreme elevation of temperature has occurred when the contractions have not been met with. A formation of heat takes place sometimes after death; and in cases where the body was actually cold at the time of decease, the temperature has risen to 109° Fahr. As a suggestion, Mr. Barlow threw out the idea that this was caused by chemical changes going on in the blood after death, such as occur during life.—*London Journ. Med.* March, 1850.

25. *Gooseberry Disease.*—In Meiningen, a peculiar affection of the skin has been long known under the above name. Children seem especially liable to it; it is observed during the season of the year when the gooseberries become ripe; and only attacks those individuals who pluck the berries from the bushes, or are much in the gardens. The symptoms are intolerable itching of the skin, fol-

lowed by eruptions, commonly of the papular form, frequently vesicular or pustular. Sometimes erythematous patches or ulcerations are observed. The flexures of the joints, especially of the lower extremities, are the chief seats of the diseases; and its severity is generally proportionate to the fairness and delicacy of the patient's skin.

Dr. JAHN, of Meiningen, had, for several years, been familiar with this species of prurigo; had observed that the eating of gooseberries had nothing to do with its production, but that individuals who, without even tasting of the fruit, were much occupied in the neighbourhood of gooseberry bushes in gardens, were apt to suffer. The precise connection between the bushes and the skin affection, he discovered in the summer of 1848. On examining the legs of a girl who was suffering severely from the disease, he observed a large number of minute yellow points round the margins of some of the sores, and, on looking at a few of these through a microscope, he found the *points* converted into great spider-like insects. Professor Emmrich, of Meiningen, recognized these mites as specimens of the *Leptus autumnalis* of Latreille. Jahn has since discovered the insect in other cases of the disease; has ascertained that it is very frequently to be met with on the leaves of the gooseberry plant, and, as different species of the genus *Leptus* are known to attack the human skin, the origin of the gooseberry disease is no longer a mystery. Microscopic examination has shown that the orifices in the cuticle, leading to the glands of the skin, are likewise the passages which the parasite selects for its inroads. The treatment of the disease is very simple. If the patient ceases for a few days to visit the gardens, and washes the affected parts with soap and water, or with a lotion containing *hepar sulphuris*, a cure is soon effected.

Jahn mentions that there are certain circumstances in the topography of Meiningen particularly favourable to the development of the *Leptus autumnalis*, but it is highly probable that it may, in other localities, produce similar effects in warm moist seasons.—*Monthly Journ. Med. Sci.*, March, 1850, from *Jenaische Annalen*, Heft I., Band I.

26. *Cases of Abscess behind the Pharynx.* By CHRISTOPHER FLEMING, M. D.—The presence of abscess behind the pharynx in childhood, and especially in infants, is often difficult, and the following cases are therefore of some practical value:—

CASE I.—Francis Kelly, aged two months, was observed by his mother, a few days before her application to me at the Netterville Hospital,* to have a peculiar snuffle in his breathing, some difficulty in deglutition, and occasional attacks of dyspnoea of variable duration. In all other respects, the child was, and had been from birth, in excellent health. He was a well-thriven child, and his only nourishment was the breast. The “epidemic influenza” being then prevalent amongst the children of the poor, I considered these symptoms as premonitory of an attack of it, and directed my treatment accordingly, but the child did not improve. On the contrary, the symptoms above noted gradually increased in intensity, and severe fever was superadded. The child from day to day was intolerably restless; he could only suck for a moment or so, spasmodically snapping the breast in his mouth, when a violent paroxysm of dyspnoea would force him equally abruptly to drop it. In one of these paroxysms he was seized with a fit of convulsions, on about the eighth day from the date of his illness. This occurred about the middle of last month.

The features of the case now assumed a most alarming aspect, and a convulsive fit appeared to be momentarily threatened. The child lay in a semilethargic state, with the countenance full and bloated, and the features constantly undergoing changes from repeated muscular twitchings. The eyelids were half closed, and the eyeballs protruding. The tongue in perpetual movement, projected beyond the teeth and lips, as if too large for the mouth, a position which the mother remarked it retained within the last few days, during the casual slumbers of the child. In addition, the snuffle-breathing

* Mr. Torney, the resident medical officer at the instituton, witnessed the progress of this case throughout.

was most intense, accompanied by a loud gurgling noise in the fauces, and the dyspnoea and dysphagia were equally urgent. All symptoms were aggravated by attempting to put the child to the breast. From the cries of the child, it was obvious the larynx was unaffected, and no physical indication of any thoracic lesion could be detected. Under all these circumstances, I directed my attention to the pharynx; the examination produced a most violent paroxysm of dyspnoea, during which the child was seized with a slight convulsive fit. I satisfied myself that an abscess existed there, and bringing to my recollection the fact I had recorded in my former communication, that a spontaneous discharge through the nose had taken place in the case of a child aged seven months, then reported, it occurred to me that I might, under the circumstances of this case, artificially imitate nature. I took my opportunity, and, rapidly passing my finger, pressed it with force against the abscess; purulent matter darted through the anterior nares. Afterwards the child appeared to suck with less uneasiness, and the respiration was improved. From day to day a variable amount of discharge took place from the nose, accompanied by very trifling alleviation in the prominent symptoms. The child, however, was able to take more nourishment, and the act of sucking was less distressing. About this time Mr. Colles and Mr. Wilmot saw the case, when the characteristic features of the abscess were still well marked. I was obliged more than once to make forcible pressure against it with my finger, to keep the opening free, and had yet doubts whether I should not make an opening through the mouth. With this view I consulted Sir Philip Crampton, being anxious as well for his opinion as that he should see a case of the kind in so very young a subject. In his examination of the fauces, so violent a fit of convulsions supervened that he recommended me to rest satisfied with the opening already made, as he observed the purulent discharge from the nose then present, and as, from the very limited capacity of the mouth of the child, and its great sensibility, risk might attend further interference. I acted on his suggestions, gave the child mild stimulants and nutriment, and enjoined that position whereby the matter could get free egress, as in the former case. The child is rapidly improving in health, and has lost all the alarming symptoms which existed. The snuffle-breathing has not as yet completely disappeared, but the respiration and deglutition are natural. The child can suck continuously, and is getting fat.

CASE II.—In July last, a young girl, aged eleven years, was brought to my friend, Dr. Montgomery, complaining of uneasy sensations about the throat and neck, which were to be dated to the latter end of the preceding April, and were not referable to any special cause. These sensations commenced with what is commonly termed a crick or stiffness in the back of the neck, and continued with variable intensity, causing more or less uneasiness, and often extreme pain in the ears. The movements of the head and neck were extremely limited, and necessarily measured with great caution to render them tolerable. The girl was delicate-looking, of strumous aspect and strumous constitution. Having had enlarged tonsils, and complaining of difficulty in swallowing, Dr. Montgomery's attention was early directed to the throat, where, after the lapse of six or eight weeks, a train of symptoms developed themselves, which led him to the conviction that an abscess was about forming at the back of the pharynx. Under these circumstances I saw the child, and I found all the symptoms to indicate its presence. The countenance was peculiarly expressive, the voice nasal and muffled, and the movements of the head and neck very remarkable. The latter particularly brought to my recollection similar movements attendant on disease of the cervical portion of the spine. The muscles at the back of the neck were in a semi-rigid state, the sterno-mastoid equally so; and in speaking, the action of the labial and nasal muscles gave a sort of tetanic cast to the countenance. The jaws were separable, but limitedly so, admitting a finger to pass between them. The tongue was easily protruded, but yet with a sort of spasmodic jerk. The head was almost fixedly retained in the horizontal position, the lower jaw at the same time projecting forwards, as if to accommodate the pharynx in its functions. The elevation of the head or its lateral movement was wholly impracticable, and from the manner in which they were performed, gave a very peculiar stamp to the countenance.

On stripping the thorax, a lateral curvature of the spine was visible; there was also extreme tenderness on pressure over the spinous processes of the cervical vertebræ, particularly their central portions. There were yet no other symptoms indicative of caries of the spine; there were no shooting pains along the arms, nor about the lateral portions of the head. In fact, there was, latterly, rather a disposition to alleviation than aggravation of the original symptoms. The local characters of the abscess were most marked; there was a general blush of the fauces, and immediately behind the soft palate, when the tongue was much depressed and at the same time not allowed to protrude, a passing glance caught the pharynx bulging forwards in the median line, where, pressure being made with the finger, most unequivocal fluctuation could be felt through a tense, elastic, membranous wall. The boundary of the abscess above could be measured by the finger with ease, but below it was gradually bevelled off, the sensation of fluctuation being communicated throughout. Dr. Montgomery's opinion being confirmed, the opening of the abscess was decided on, and effected by an ordinary sharp-pointed bistoury, protected to about half an inch from the point. In proceeding to open it, I depressed the tongue well with the fore-finger of the left hand, and endeavoured to cloak the glottis on the escape of the pus. The opening was accomplished with ease, and was made in a *transverse* direction; a large gush of matter darted forwards, so as to fill the depressed cavity of the tongue, and more escaped by pressure from below with the finger passed into the mouth. The child expressed herself much relieved, and her attendant remarked she was able to raise up her head. I fancied, also, that its lateral movements were effected with more ease. On the ninth day after the opening of the abscess, I again saw this little girl; she expressed herself as being much better; the varied movements of the head and neck, though yet imperfect, were much improved. On examining the throat, the site of the opening presented an ulcerated margin; it was exactly in the median line, and could be seen without much difficulty. On introducing the finger into the pharynx, much fulness was discernible, and I could discover that this extended a good way below the level of the opening. I satisfied myself no matter was lodged in the abscess; its anterior wall appeared as if detached from the spine, and it occurred to me that air might have kept it so. Syrup of the iodide of iron was directed, tepid salt-water bathing recommended, and every attention to improve the general health enjoined; Dr. Montgomery and I coinciding in the opinion that in this case it was to be apprehended some lesion of the vertebræ existed.

January, 1850. I have heard from Dr. Montgomery that the child has recovered from all previous symptoms, with the exception of a certain limited and studied movement of the head, and that the general health is perfectly restored.

The details of the above cases are given so much at length that it is almost unnecessary to add any remarks. The second case requires none. The age of the child, and the chronic character of the abscess, with the other attendant local symptoms, assisted in removing any difficulties which might otherwise arise, and no hurried measures were called for on the part of the surgeon. Its favourable termination, notwithstanding the more than probable connection of the abscess with spinal disease, is, perhaps, its most remarkable feature. Not so the first case; there, the tender age of the patient, the extreme acuteness and urgency of the symptoms, necessarily equivocal in their nature, and their purely local cause, tended most materially to obscure the diagnosis. I have recorded a case somewhat doubtful at the age of four weeks, but I have never before met with one so unequivocal in its nature at a younger period than four or six months. I have brought these cases forward at present, even at the risk of repetition, from the conviction of their importance in the catalogue of diseases to which children are liable, and from the impression on my mind that such affections of the throat too often escape observation; hence many children must fall victims to them, and many are subjected to treatment, if not inimical to, certainly wholly unfitted for their relief—treatment, from the nature of the attendant symptoms, necessarily active and severe. To my former communication on this subject I have little to add; the cases now reported

are but a confirmation of the statements then made.—*Dublin Quarterly Journ.*, Feb. 1850.

27. *On a Peculiar Disease of the Nasal Fossa*.—DR. JOHN GAIRDNER read to the Edinburgh Medico-Chirurgical Society, the following case:—

“The subject of my narrative was about fifty years of age, when he became affected with a common coryza of no unusual severity. While labouring under it, he was called to a piece of professional duty at a considerable distance. It was early in May, and he had to travel twelve miles of his journey in an open vehicle, and under a chilly atmosphere—the last four miles being after sunset. His coryza was thus very sensibly increased, and it became still more troublesome after his return. A week after the date of his journey he was obliged to take to bed for four days, in consequence of feverishness, headache, and excessive coryza; which last symptom was then, for the first time, attended with a most distressing fetor. The fetor proceeded exclusively from the right nostril, from which also the discharge chiefly came. The matter was thick and opaque. There was considerable pain in the right superior-maxillary region, and also behind the mastoid process, at a point about one inch below the insertion of the right trachelo-mastoid muscle. The discharge, which was at first excessive, gradually diminished, along with the other symptoms, and he was enabled to resume his professional duties in less than a week from the time he took to bed.

Such was the commencement of a disorder which hung about him, in a subdued form, for several years. After the subsidence of the acute symptoms, his ordinary condition was as follows:—He had—1, a constant sense of partial obstruction of the right nostril, requiring some degree of force to impel air through it; 2, more than the usual amount of mucous discharge from that nostril; 3, inability to incline his head forward without causing a necessity for the use of his handkerchief; 4, fetor, not constant, not even frequent, as it occurred only once or twice a-day, and for a minute or thereabouts at a time; rarely perceptible by others; always accompanied, when it did occur, by a sensation of the escape of some fluid into the affected nostril: and usually followed by the discharge of a pellet of matter, which was thicker and yellower than the ordinary mucus of the nostril; 5, pain in the region of the right superior maxillary bone; it was a dull pain, not constant, but seldom absent for above a day, or two days at most. 6. To these things, I must add that the discharges from the two nostrils, microscopically examined, presented very different characters—that of the right nostril containing pus globules, while that of the left exhibited no characters at all different from those of the healthy secretion of the Schneiderian membrane. All these symptoms, and especially the fetor, were immediately and greatly increased by every inflammatory cold which affected the nasal fossa.

After the lapse of seven years and a half from the first invasion of this disagreeable disorder, he was lately seized with a catarrhal affection, accompanied by coryza, fetid discharge from the nostrils, and some headache. The attack was in no respect different from many attacks which he had had at various periods for some years before it. But, immediately after its cessation, he remarked with satisfaction that the fetor was gone, and the habitual discharge from the right nostril greatly diminished. The sense of obstruction in the nostril, the stillicidium upon inclining the head forward, and the pain in the maxillary region, had all undergone a great change for the better. The change has been progressive—and he is now so free from all these symptoms that his cure may be regarded as nearly complete.

On a retrospect of this case, it appears probable that the exposure in which it originated had caused the death of a minute portion of bone within the nostril, possibly of a part of the spongy bone, and that the exfoliation of this portion was the cause of the cure. That its escape was not observed by the patient is not against this supposition; as a very inconsiderable fragment would suffice to account for everything.

It may be right that I should make this history complete, by stating that the patient is of a healthy constitution, that he has not been subject to glandular

swellings, or any form of strumous disorder, that he never took mercury except in the form of a purgative of calomel, and *that* not half a dozen times in his life, so far as he can remember; and that he never in his life had any description of venereal disorder.

Two things must be mentioned with regard to his family. One is, that his mother certainly suffered from some analogous affection some years before her death; she did not indeed complain of it, and therefore he cannot supply any minute information about it; but her handkerchief gave sufficient evidence of more than usual discharge from the nostrils, and of its being thick, and, as he thinks, somewhat fetid.

The other fact alluded to is of more interest. His brother, who is also of the medical profession, experienced a similar attack in his own person. In him the complaint did not supervene suddenly, but was the result of repeated and neglected colds. For forty years of his life he scarcely ever required the use of a pocket-handkerchief. For two years he used two every day; and, when dry, they were always glued together in the manner that is caused by a discharge from an excited mucous surface. The discharge was manifestly fetid at times, though not constantly. This was not felt by himself, for the sense of smelling was then, and still continues to be, much blunted. After two years, during which time the discharge had flowed pretty copiously, and at times so freely as to be a very great inconvenience, a gradual abatement was observed; and, about this period, he was aware of some traces of osseous matter. The right nostril was much more affected than the left, but his pain was confined to the region of the frontal sinuses, and was dull, not acute. He has still a constant moisture of the right nostril, which becomes copious, not with colds only, but with any disturbance of health, and has occasionally fetor. He thinks the sense of smelling is returning. He still uses a handkerchief every day; but he remarks that when it is dry it is not now, as it formerly used to be, hard and stiff as a board. It is, therefore, evident that a great change has taken place, indicating a diminution of fibrinous exudation, and an approximation to a cure of his disease.

Under the title *ozæna*, in a variety of systematic works, will be found descriptions of a form of disease similar to the above, which are usually accompanied by an unfavourable opinion with regard to the chance of its removal. The prognostic, I have no doubt, is well founded in many instances. But I am inclined to think that where, as in the cases just related, there is neither cancer, nor struma, nor syphilis, nor mercurial crethism to contend with, the case will generally end in a cure. It is probable that such cases are seldom watched from beginning to end by those who have described them, and that they have therefore sometimes been erroneously judged incurable merely on account of their tediousness.—*Monthly Journal*, April, 1850.

28. *Erythema Nodosum*.—Dr. BEGBIE read to the Medico-Chirurgical Society of Edinburgh (March 20th, 1850), a communication on erythema nodosum, and its connection with the rheumatic diathesis. After some remarks upon the advantage of studying the symptoms which indicate the morbid state of organization on which diseases depend, and which are apt to be neglected by the superficial observer, Dr. B. proceeded to describe the eruption and course of erythema nodosum. He then detailed some very interesting cases from his own practice, in which the appearance of the eruption was preceded by a state of general cachexia, resembling that which is observed before an attack of rheumatism. In some of the cases there were deep-seated pains in the limbs and joints, and, in the course of the disease, abundant acid perspirations, and deposit of lithates in the urine. The sulphate of quinia had been recommended by Dr. Watson as useful in erythema nodosum, and in Dr. Begbie's practice it had always proved efficacious. The use of bark in rheumatism had been long ago recommended, and still had its advocates among the best informed physicians of the day. The connection between the skin disease and rheumatism was inferred, 1stly. Because erythema nodosum, rheumatism, and the rheumatic diathesis are most frequently, if not exclusively, confined to the young and those under thirty years of age. 2dly. Because these diseases are frequently

associated with disorders of the menstrual function. 3dly. Because a disordered state of the general health, characterized by pallor, cachexia, and defective excretion, precedes the eruption, and is subsequently developed in febrile excitement, pains in the joints and muscles, and copious lithic urinary deposit—symptoms all common in rheumatism. 4thly. The erythema is often associated or alternates with rheumatic fever, and is often complicated with those internal disorders with which rheumatism is allied, particularly pleurisy and pneumonia. 5thly. Remedies of reputed efficacy in rheumatism, such as quinia, are equally efficacious in erythema nodosum. Dr. B. pointed out the practical importance of bearing in mind the connection which seemed to exist between these diseases, and, in particular, of not neglecting the disordered state of the digestive and assimilating functions—often the only departure from health which the physician is called upon to treat for days, or even for weeks, before the appearance of erythema, or the occurrence of a paroxysm of acute rheumatism.—*Monthly Journal of Medical Science*, May, 1850.

29. *Therapeutical Effects of Turpentine.* By THOMAS SMITH, M. D.—The diseases for which turpentine has been prescribed, and which have been materially relieved by it, are extremely numerous; there is scarcely one, whether acute or chronic, sthenic or asthenic, which has not been successfully treated, if the testimony of some of the first practitioners of the age is to be credited, by the medicine under consideration. It would be a useless task to cite all the cases and all the maladies in which the admirers of this drug have found it advantageous. Suffice it to say, that in every instance where prejudice has not interfered, and where ignorance has not prescribed, this drug has obtained favour and proved itself a faithful friend.

In passing in review the numerous disorders for which it has been ordered, as I wish this paper to have a practical bearing, I shall dwell as briefly as possible upon all those which have not come under my own immediate observation. Those who desire a more extensive acquaintance with the nature, properties, and uses of this drug than is to be met with in these sketches, will do well to consult the pages of our monthly and weekly periodicals, which, for the last thirty years, have occupied a prominent place in the medical literature of Europe and America. The writings of Dr. Copland, Paris, Pereira, Eberle, Thompson, Brande, etc., the *Dictionnaire de la Matière Médicale*, and the records of ancient medicine, contain an amount of valuable information regarding the properties of turpentine. In common with other medicines, its therapeutic effects are liable to be modified by numerous circumstances: viz., the seasons of the year, the idiosyncrasies, age, or sex, of the individual, the special or general cause of the malady, or its occurrence before, or subsequent to, any general or universal epidemic.* From a neglect of these precautions, many really valuable remedies have, though somewhat undeservedly, fallen into disrepute.

As a rapid and safe *counter-irritant*, there is no drug more efficacious than

* It is a remarkable fact that after any severe visitation, such as epidemic cholera, the human frame undergoes an extraordinary change. Many will, I have no doubt, recollect how general was the custom to abstract large quantities of blood in fevers and inflammatory disorders previous to 1831. Venesection was the practice of the day. On the advent of the epidemic influenza of 1833, general bleeding, even in maladies of a high phlogistic character, could not be adopted with safety; numerous lives were doubtless sacrificed, ere this change in the human constitution—its inaptitude to bear excessive depletory measures, was fully appreciated and understood. We are now approaching an epoch (if we have not already entered it), in which the vital phenomena of the animal organism will manifest themselves differently under the influence of remedial agents. If my observation does not deceive me, I am inclined to believe that this great climacteric change, on the completion of the cycle of the late formidable and universal epidemic, will mainly develop itself, by inducing a lax condition of the intestinal tube. I have noticed, that patients who have been accustomed to take large quantities of aperient medicine, now rarely require it; and when it is needed, a smaller portion is found sufficient. This is not confined to the aged, for even in children I have witnessed a similar alteration in their former habits.

warm oil of turpentine or camphine. I have never known an instance of its acting injuriously when thus applied; it never produces strangury or any uneasiness of the urinary organs, like preparations of cantharides; and here I fully coincide with the opinion expressed by the late Dr. Ryan, that when counter-irritation is deemed imperatively necessary in severe acute diseases, as cerebritis, hydrocephalus, pneumonia, enteritis, peritonitis, or hepatitis, it is an extremely inert and unjustifiable practice, to wait for twenty-four hours for the irritating effects of a blister, when the same may be produced in as many minutes by epithems of warm oil of turpentine.

Veterinary surgeons have condemned the external use of turpentine as an epispastic; it has been asserted that, when applied to the horse, it prevents the hair from growing. I do not think this correct. Some years ago I had a gray mare, which was seriously injured about the head and forelegs by an accident. Contrary to the recommendation of my veterinary surgeon, who insisted upon the application of tincture of myrrh, and greasy unguents containing gunpowder, I determined for once to try the experiment, if an injury to a horse might not be remedied by the same means as one in a human subject. I had the wounds carefully fomented and poulticed, and afterwards applied an ointment, consisting of resin ointment and oil of turpentine. The animal recovered without any material disfigurement. Last year I had a black horse consigned to me by a friend in Yorkshire, which met with a severe accident in its transit on the railway. The horse was treated in the same way as the one above, and in a few months was perfectly restored, without any other blemish.

The liniment, by means of which the celebrated quack St John Long was supposed to have performed miraculous cures, was a mixture of the oil of turpentine, pyroligneous acid, and yolk of egg.*

As a *vermifuge*, turpentine has been given in the form of Chabert's oil. This is made by mixing one part of the empyreumatic oil of hartshorn, with three of oil of turpentine, allowing them to stand for three days, and afterwards distilling off three-fourths of the mixture by the aid of a sand bath. It very soon becomes blackened, by exposure to the air, and therefore ought to be kept well corked, and excluded from the light. It is extremely nauseous; and, on that account, is not likely to come into general use.

As a *purgative*, turpentine ought never to be administered alone, in large doses, during the winter, or in cold damp weather: because under these circumstances, it tends, in common with other hydrocarbons, to supply fuel to the body for the evolution of animal heat, rather than exert any therapeutic property. Indeed, I very much question the propriety of giving it alone, as a purgative under any circumstances whatever. There are some writers who do not hesitate to recommend it in doses which I consider unjustifiable. In winter, cerebral congestion may supervene; in summer, intractable diarrhoea, from over-excitement of the mucous membrane of the bowels. The case of Dr. Copland furnishes an instructive example on this head: ten drachms of the oil of turpentine were swallowed, and failed to induce action of the bowels or kidneys; the consequence was, high cerebral excitement, followed by a train of unpleasant symptoms, which it would be dangerous, in some constitutions, to excite.

Turpentine is, however, often a valuable addition to other purgatives, as it possesses the faculty of increasing their activity in a remarkable degree. I have known a lady, who, for forty years, was unable to procure an evacuation without the most drastic purgatives. She succeeded in obtaining daily action, by the simple combination of a teaspoonful of castor oil with ten drops of oil of turpentine. I have had another case under my care, where the same combination enabled me to relieve the augmented suffering occasioned by obstruction of the bowels from chronic meningo-myelitis of several years duration.

Whatever may be the object for which turpentine is exhibited as a purgative, whether for the expulsion of parasites infesting the human body, or as a revul-

* This liniment is an excellent counter irritant. We used it as an external stimulant in some cases of cholera during the past epidemic, as recommended by Dr. James Bird; and we frequently employ it as a counter-irritant in phthisis, and other chest diseases.—
EDITOR.

sive in cerebral affections, the dose should never exceed half an ounce at one time; and to insure its purgative action, it ought to be united with some other aperient, as castor oil, compound infusion of senna, sulphate of magnesia, or the decoction of the bark of the root of the pomegranate. If prescribed in the above dose, in conjunction with any other active purgative, we run little risk of inducing strangury, or any other unpleasant symptom. It may be repeated at intervals of four hours, with perfect safety. Though some authors have stated that the dose of the oil of turpentine may be from half an ounce to two, or even four ounces, he must be a very bold practitioner who would take this suggestion for his guide. If the first-named quantity will not suffice for the destruction and consequent expulsion of a *tænia*, a larger amount given at one time will equally fail; for it is not by the aperient properties alone of the medicine (as I shall hereafter show) that the death of the worm is effected.* As a *diuretic*, the dose may be from five to thirty drops, taken in any aromatic water, or mineral saline. I have rarely found patients object to its use, when exhibited with the salines of either Cheltenham or Harrowgate; and the numerous cases in which I have prescribed it, in conjunction with the waters from these mineral springs, have convinced me, that this union is especially indicated where we are anxious to direct its influence to the renal organs.

As an *astringent*, in doses varying from 20 minims to a drachm, according to the urgency of the symptoms, and repeated every three or four hours, turpentine is one of the most efficacious remedies which we possess. The best vehicle for its administration, in the first place, is water, flavoured with syrup of orange, or any other agreeable aromatic. It may afterwards be advantageously combined with any other therapeutic agents, which the special nature of the case may require: thus, in epistaxis depending upon rupture of one or more small vessels, and where much arterial blood has been lost, muriated tincture of iron will form a valuable adjunct. In hæmatemesis and other sanguineous discharges from the bowels, it may be united with compound infusion of roses, sulphate of magnesia, iced-water, and solutions of tannic or gallic acid. In some forms of hæmoptysis, it may usefully be added to infusions of matico; in hæmaturia, to the decoctions of *uva ursi*, *chimaphila*, *pyrola*, etc.; or to tincture of sesquichloride of iron, etc. In purpura hemorrhagica, the decoctions or infusions of the barks form with it an excellent adjuvant. In hæmoptysis, it has speedily and effectually arrested the hemorrhage; and is a much safer remedy than lead.

In my experience, there is no single medicine in the *materia medica* that can be compared with it as a *styptic*, either as to certainty of action or to the safety of its effects. It is compatible alike with acids and alkalies.

The *external use* of turpentine has been very general for a great number of years, alone or combined with other rubefacients, such as mustard, strong liquor ammoniæ, pyroligneous acid, cajepout oil, wine of hellebore, colchicum or opium, tartar emetic, croton oil, etc. It has very frequently been found of permanent utility, when applied as a warm epithem to the skin in pulmonary affections. Its action is twofold; first, it induces rapid though often transient counter-irritation; secondly, its vapour is inhaled into the lungs, and by its constringent operation on the extreme capillaries of the pulmonary texture, is not infrequently productive of great relief in some affections of these organs. For the purpose of inhalation, I am in the habit of dispersing its vapour through the room by evaporating water containing a portion of it, by the aid

* There may be special cases, but they will be extremely few, in which an extraordinary dose of any particular medicine may be peremptorily called for by the condition of the patient. For instance, I once gave to a man labouring under delirium tremens, seven grains of the acetate of morphia, in divided doses, within two hours, ere I could allay the inordinate and convulsive movements, and restrain the shrieks of the wretched sufferer. Again, at another time, I exhibited to a female, in the presence of Dr. Logan, twelve ounces of sulphuric ether, when the principles of etherization were first introduced, and kept this woman in a state of insensibility for upwards of six hours. Although both these cases did well, they are exceptional ones, and ought never to be imitated, except in emergencies of the most urgent description.

of a spirit lamp. When thus diffused through the atmosphere, it may be breathed for two or three hours in the course of the day, by the most delicate-chested person, and often with the most marked and striking amelioration of their pectoral symptoms.

Long after the patient has left the room, he is conscious of the taste and smell of the turpentine. I have often detected its presence some hours after he had been submitted to its penetrating influence. I have also employed camphine in the form of a bath, mixed with common soda; or two pounds of the latter with from a quarter of a pint to half a pint of camphine, and half an ounce of oil of rosemary, will form an excellent bath. In delicate skinned patients, females and children, $\frac{3}{4}$ ii of camphine will be sufficient. I may remark, *in limine*, that the alkaline camphine bath possesses virtues peculiarly its own. In the coldest day in winter, as I have verified in more than one instance, it may be employed with the most perfect safety. Whilst the individual is in the bath, he experiences, to my knowledge, no disagreeable annoyance from the disengaged vapour; on the contrary, if we except the taste of the turpentine, which for some time remains in the mouth, a sense of calmness and tranquillity very often follows a previously disturbed, irregular, or excited condition of the respiratory or sanguiferous systems. After five minutes recumbency in the bath, the pulse is found to become fuller, softer, and slower; I have seen it fall from 100 to 80. The respiration also becomes freer, deeper, and less laboured. On coming out of the bath, the whole skin has a peculiar velvety, soft, and agreeable feeling; the breath is strongly tainted with the terebinthinaceous odour. If it have not been too hot, a pleasurable tingling warmth is experienced throughout the whole cutaneous surface; and this, with the preceding symptoms, may continue twenty-four hours. One great advantage of this bath will be found in the circumstance, that it may be employed at a heat from 10 to 15 degrees below the temperature of the ordinary warm one, without inducing that sensation of chill to which some delicate constitutions are so peculiarly obnoxious; ten or fifteen minutes is the length of time a patient ought to remain in a bath of this description. In the first instance, it is well for patients to commence with a smaller quantity of the turpentine and soda, say a pound of the latter with two or three ounces of the former, and gradually increase its strength on each repetition of the bath, to the first-mentioned proportions. This bath may be taken every second or third day, according to the urgency of the symptoms and the nature of the affection for which it is prescribed.

I come now to a more particular enumeration of the maladies for which turpentine and its preparations have been chiefly recommended. They are—sanguineous exhalations from the mucous surfaces, epistaxis, hæmoptysis, melæna, purpura hemorrhagica;* consumption, chronic bronchitis, mucous or purulent discharges from the urethra;† grubs infesting the urethra, tænia, ascarides;‡ typhoid, yellow and puerperal fevers, plague;§ abdominal obstructions, strangulated hernia, tympanitis, colica pictonum, biliary concretions;|| traumatic tetanus, trismus;¶ apoplexy, hydrocephalus, acute and chronic, epilepsy;** neuralgia, sciatica, rheumatism;†† diabetes, dropsy;‡‡ inflammations of the

* Adair, Brooke, Cheyne, Clutterbuck, Copland, Elliotson, Hunter, Mageé, Nichol (W.), Thompson, Vincent, Younge.

† Aretæus, Celsus, Dioscorides, Van Swieten.

‡ Birkbeck, Cross, Fenwick, Fothergill, Gomés, Hancock, Hartle, Kennedy, Knox, Laird, Lettsom, Maldon, Mello, Ozanam, Pereira, Saner, Winstone.

§ Atkinson, Blundell, Brennan, Chapman, Copland, Cullen, Douglas, Farre, Faulkner (Sir A. Brooke), Fernandez, Gooch, Hamilton, Holst, Johnson, Kinneir, Moran, Payne, Physick, Pritchard, Wood.

|| Boerhaave, Durand, Gibbon, Green, Guyton de Morveau, Hall (Marshall), Hamilton (C. B.), Kinglake, MacWilliams, Odier, Paris, Ramsbotham, Sewell, Sprengel.

¶ Gibbon, Hutchinson, Mott, Phillips.

** Latham, Lithgow, Money, Moran, Percival, Pritchard, Young.

†† Bonnet, Cheyne, Ducros, Dufour, England, Hild, Home, La Roque, Lenton, Martinet, Maton, Pitcairn, Recamier, Thilenius.

‡‡ Darwin, Werlhoff.

eye;* cholera, renal hydatids, suppression of urine;† burns, wounds, poisoning by prussic acid or opium, salivation.‡—*Lond. Journ. Med.*, April, 1850.

30. *Remarks on Vermifuges*.—DR. CAZIN, of Boulogne-sur-Mer, having had the opportunity of treating a large number of worm cases, has published the following interesting account of his experience. He states that he has frequently employed the common spigelia, or worm-grass. He administers it in the form of decoction, prepared by boiling two drachms of the herb in a quart of water to one-half. The decoction is then expressed, strained, and flavoured with a little lemon-juice and a sufficient quantity of sugar. The dose for an adult is two wineglassfuls, followed by a wineglassful every six hours until the desired effect is produced. To children and delicate persons a smaller quantity is to be given.

Wormwood (absinthium) is an excellent indigenous anthelmintic; it is also a powerful tonic and stimulant, the use of which, continued after the expulsion of the worms, prevents their reproduction. M. Cazin often uses a wine prepared by digesting an ounce of wormwood, with an equal quantity of garlic, in a bottle of white wine, of which he gives from one to three ounces every morning. This wine is well-adapted for poor lymphatic subjects, wasted by wretchedness, and suffering from the influence of a marshy soil. The absinthium maritimum is likewise a very good anthelmintic. M. Cazin gives it to the extent of one or two drachms boiled in four or five ounces of water, with the addition of some white sugar, or of any anthelmintic syrup. This is quite a popular remedy in the maritime districts, and almost always succeeds with children affected with worms.

Although a case of poisoning by Cevadilla has been reported, M. Cazin has administered this vermifuge with success in cases in which ordinary anthelmintics had but little effect; but he has always commenced with a very small dose, in order to ascertain how far it would be borne by the digestive organs. For children, the dose of this plant is from a grain and a half to four or five grains of the powder of the seeds, mixed with syrup of rhubarb; for adults eight or nine grains, with the addition of a little sugar and a few drops of oil of fennel. In each case the dose is to be repeated daily for four days, after which the infusion of chamomile is to be given.

Assafoetida possesses acknowledged anthelmintic properties, and is suitable for cases of sympathetic nervous affections produced by the existence of worms. It thus, like valerian, fulfils a twofold indication. In a case of nervous affection, which M. Cazin believed to be idiopathic, the administration of assafoetida both determined the disease and revealed its true cause, by effecting the expulsion of a number of lumbrici. This result has, in three cases of chorea and in two of epilepsy, enabled him to recognize that sympathetic irritation—depending on the presence of intestinal worms—was the sole cause of disease in these instances. Under ordinary circumstances, M. Cazin frequently combines assafoetida with calomel in pills. This combination, of all those that he has employed, succeeds best in expelling lumbrici. He has also combined it with black oxide of iron, particularly in anemic patients. Assafoetida may be given in powder, in doses of from four grains to half a drachm.

The essential oil of turpentine is not merely useful in cases of tænia, it is also decidedly efficacious in expelling the lumbrici. M. Cazin has sometimes, in cases of lumbrici and ascarides, administered with advantage turpentine, enemata, prepared by suspending, by means of yolk of egg, from one drachm to half an ounce of the oil in decoction of tansy, absinthium, worm-seed (semen-contra), or Corsican moss.

Common salt is very destructive to worms; it is given alone in large doses dissolved in water; it should be taken on an empty stomach. M. Cazin also frequently administers it in the form of enema, with brown sugar, linseed or

* Burke, Carmichael, Foote, Guthrie, Hynam, Langier, Middlemore, Wright.

† Bayle, Copland, Neale, Pereira.

‡ Emmert, Geddings, Hanold, Heister, Jenkins, Kentish, King, Orfila, Paré (Amboise), Percy, Pott.

poppy oil, and a sufficient quantity of water. With children it almost always succeeds.

Like all tonics, iron has the advantage of destroying worms, at the same time that, by imparting tone to the intestines, it prevents their reproduction. From six to eight grains of iron filings, mixed with an equal quantity of rhubarb, and taken twice or three times a day, have often been sufficient to expel the worms contained in the intestines. M. Cazin succeeded in rapidly curing a boy nine years of age, emaciated and pale, whose sleep was disturbed, and who was suffering from spasmodic movements similar to those which characterize chorea, by the exhibition of pills of sulphate of iron, combined, according to Fuller's formula, with aloes, senna, &c., under which treatment he voided twenty-three lumbrici in four days. He has also used with remarkable success Bosen's mixture, containing extract of black hellebore and sulphate of iron. But what he chiefly gives to children, as well as to adults, is the syrup of citrate of iron (four parts of citrate to sixty of simple syrup, and one of essence of lemon), in doses of from two drachms to half an ounce to children, and from half an ounce to two ounces to adults.

M. Cazin remarks that calomel, so efficacious as an anthelmintic, ought never to be combined with an alkaline chloride, as the formation of corrosive sublimate would probably ensue from their admixture. In like manner, the combination of calomel with cherry-laurel water, or emulsion of bitter almonds, would give rise to the development of two formidable poisons, corrosive sublimate and cyanide of mercury.

The effects of the male fern, tin, pomegranate bark, hellebore, &c., require merely to be noticed; and the properties of the pomegranate root bark are so well known that they need not be dwelt upon. M. Cazin has remarked nothing particular respecting other anthelmintics. He merely says that cod-liver oil has succeeded with him in the cases of two females, one of whom passed twelve lumbrici the same day that she had taken in the morning three tablespoonfuls at intervals of an hour.

But, whatever be the medicine selected, we must not, like routine practitioners, be content, when the worms are killed and dislodged, with this merely palliative cure. A very important indication remains to be fulfilled, viz., to prevent their reproduction. This object is attained, according to M. Cazin, by the adoption of a tonic and stimulant regimen, which must be long continued, and, above all, by the employment of bitter and chalybeate preparations. He has found the ferruginous chocolate to be sufficient, in the case of children, to prevent the relapses which are for many years very apt to occur. Wine taken while fasting has succeeded with the poor inhabitants of the marshes, accustomed to live only on vegetables and milk; and he has also remarked its efficacy as a preventative of worm affections in other instances.

To these observations of M. Cazin, the editor of the *Journal de Médecine* has appended the following practical remarks. The number of experiments tried by M. Cazin leaves no room for doubt respecting the enormous amount of worm affections which he must have met with. Such a result may appear strange to Parisian physicians, who attribute to the presence of worms in the intestines only a very trifling influence over the symptoms formerly ascribed to them. But if worm affections are rare among the inhabitants of large towns, they are frequent and generally more serious among the peasantry, and particularly among those who are poor and placed in unfavourable hygienic circumstances. We shall, therefore, take the present opportunity of mentioning the efficacy of *brown santonine*, lately brought under the notice of the readers of the *Bulletin de Thérapeutique*, by M. Gaffard, an apothecary at Aurillac.

The difficulty experienced in procuring pure santonine, both on account of its high price, and for other reasons, has induced M. Gaffard to endeavour to obtain from *worm-seed*, a product which may possess the advantages of the former, and at the same time be free from the objections to the use of the latter. This product he calls brown or impure santonine; it is obtained in the following manner:—

Take of Aleppo worm-seed, three ounces; carbonate of potash, one ounce; slacked lime, sifted, half an ounce; water, from three pints to three pints and a half. Place the mixture on the fire, stirring occasionally with a wooden spa-

tula; let it boil for an hour; on removing it from the fire pass it with expression through a linen cloth, let it settle, decant, and add hydrochloric or nitric acid until it reddens litmus without being sensibly acid to the tongue. Allow it to rest, pass it through a filter previously moistened, or through a piece of close canvas, and allow the product which remains on the filter to dry in the open air until it acquires the consistence of firm butter. This product, which is a mixture of santonine, resin, and essential oil, will answer for the various pharmaceutic forms in which the practitioner may wish to exhibit it. M. Gaffard gives it in the form of lozenges composed as follows:—

Brown santonine, three drachms; powdered sugar, thirteen ounces; powdered gum, one ounce and a half; essential oil of lemon, twenty-five drops. Place the brown santonine in a marble mortar; add by degrees, and with constant trituration, the sugar mixed with the essential oil and the gum, so as to make a homogenous powder. Form with a sufficient quantity of water a mass of the desired consistence, and divide it into lozenges, each of which shall weigh, when dried, fifteen grains; each lozenge will then contain somewhat more than one-third of a grain of brown santonine.

For infants under six months the dose will be one lozenge night and morning; from six months to a year, two lozenges night and morning; from one to two years, three, and from two to four years, four night and morning; for children of five years and upwards a lozenge for each year of the child's age should be given night and morning. The medicine to be continued until the desired effects are no longer produced.—*Journal de Médecine et de Chirurgie Pratiques*, March, 1850.

[A remedy for tape-worm, which has been for some time employed in France under the name of koussou, has been recently tried in King's College Hospital, London, with marked success. It is an infusion of the dried flowers of the *Brayera anthelmintica*, a native of Abyssinia, in which country it is a popular remedy for this worm, which is very prevalent amongst the inhabitants. A single dose, which is prepared by macerating for a quarter of an hour half an ounce of the dried flowers powdered in half a pint of luke-warm water, is taken at a draught, the suspended powder being all swallowed. Lemon juice may be taken before and after the dose. It usually brings away the worm in an hour or two after it has been taken. Those who have tried this remedy state that it is equally safe as effectual; and the only objection to its employment is its high price at present.]—*Dublin Quarterly Journal*, May, 1850.

31. *Treatment of Chorea*.—M. FAIVRE D'ESNANS mentions, in the *Journal de Médecine et de Chirurgie Pratiques*, that he has obtained the happiest results from the prussiate of iron in chorea and epilepsy, and he gives several cases where the cure was obtained in between four and eight days. He uses the following formula:—Prussiate of iron, fifteen grs., extract of valerian, forty-five grains; make twenty-four pills. One pill to be taken three times a-day, at six hours' interval, each pill to be followed by a wineglass of infusion of valerian. The author was induced to try the prussiate of iron, from having seen M. Jourdes use it, at the Military Hospital of Strasburg, for intermittent fever. As he considers that both diseases (chorea and ague) have their seat in the medulla spinalis, he thought that the same remedies would prove efficacious in both complaints, in which supposition, according to his statements, he was not deceived. Dr. Zollickoffer, of Maryland, used it many years since in intermittent and remittent fevers, dysentery, &c., and highly extols its powers. (See *Philad. Journ. Med. and Phys. Sc.*, vol. vi., 1823.)

SURGICAL PATHOLOGY AND THERAPEUTICS, AND OPERATIVE SURGERY.

32. *Diseases of the Membrana Tympani*.—MR. TOYNBEE exhibited to the pathological society of London (March 18, 1850) an extensive series of preparations illustrative of the diseases of the membrana tympani:—

He remarked that time would not allow him to do more than indicate briefly

the principal pathological conditions to which this structure is liable. In the first place, he would point out the diseases to which each of the component structures of the membrana tympani is liable, independently of the others; and, in the second place, describe those in which all its structures were implicated.

The external or epidermoid layer of the membrana tympani is found in two diseased states; the first is hypertrophy, in which it becomes many times thicker than natural, and forms a dense laminated mass, which adheres to the outer fibrous layer; the second diseased state is where it is slightly thicker than natural, its surface being studded by numerous small round masses, and in this state it adheres to the fibrous layer much more firmly than natural. Before referring to the diseased conditions of the fibrous laminae, it is requisite to observe that it not only consists of two sets of fibres, the radiating and circular, but these sets of fibres form two distinct layers, easily separated from each other, and subject to diseases wholly independent of each other. Thus it will be often found that the outer or radiating fibrous layer is thicker, whiter, and more dense than natural, while the internal circular fibrous layer is perfectly healthy. In other cases, the internal layer is much thickened, while the outer layer is translucent and healthy. The external surface of the outer layer is frequently the seat of chronic inflammation, when it becomes very thick and vascular, and is covered by granulations of a deep red color; polypi are also developed from it. Chronic inflammation of the outer layer of the membrana tympani frequently induces ulceration, by which process portions of one, often of both of the fibrous laminae are destroyed, while the mucous membrane remains entire. In cases where only a small portion of each of the fibrous laminae has thus been removed by ulceration, a deep depression exists; caused by the mucous membrane bulging inwards. Where much of the fibrous coats has been destroyed, the mucous membrane falls inwards towards the ossicula and promontory, and becomes adherent to them. The fibrous layers are also the seat of calcareous deposit. The internal mucous lamina of the membrana tympani, which, in its natural state, is so thin that it is frequently difficult to detect its presence, becomes thickened by chronic inflammation, and is sometimes so much hypertrophied that its inner surface is in contact with the promontory. In acute inflammation, lymph is effused from this mucous layer, and bands of adhesion are formed which connect it to the ossicula or to the inner wall of the tympanum.

The diseases of the membrana tympani in which all its component structures are at the same time affected are the following:—

1. *Hypertrophy*, where the epidermoid, fibrous, and mucous layers are thickened. This not unfrequently proceeds to so great an extent that the membrana tympani is ten, or even twenty times its natural thickness, and it becomes opaque, hard, and dense, like a piece of cartilage.

2. *Ulceration*, where all the layers are destroyed wholly, or only in one part, so as to cause a perforation.

3. *An increase of the external concavity*, so that its external surface is in contact with the promontory, to which it is frequently firmly adherent.

4. *An absence of the external concavity*, in place of which it is perfectly flat.

5. *Scrofulous degeneration*, in which all the layers lose their natural structure.

6. *Calcareous degeneration*, in which there is often not a vestige of healthy structure in any of the layers.

7. *An increased degree of tenseness*.—This state is most frequently accompanied by the presence of membranous bands, which connect its inner surface to the promontory, stapes, or other parts of the inner wall of the tympanum.

8. Sometimes the whole of both fibrous coats are destroyed by ulceration, and the mucous layer remaining entire falls inwards, and covers the surface of the promontory and the inner wall of the tympanum.

9. Sometimes one half of the membrana tympani is destroyed, and the border of the remaining half becomes adherent to the inner wall of the tympanum, forming a closed cavity.

10. The entire substance of the membrana tympani is sometimes ruptured. The part most subject to rupture is that between the posterior margin and the handle of the malleus.—*London Med. Gaz.* April 12, 1850.

33. *Caries of the Head of the Femur.*—Mr. HENRY SMITH exhibited at the Westminster Medical Society (January 26th, 1850), two specimens, both of which had been excised during life. The first had been removed by Mr. Morris, of Spalding, from a youth, eighteen years of age. This instance was eminently successful.* The other specimen was obtained by him (Mr. S.) from an adult, between thirty and forty years of age, formerly in the Grenadier Guards. He had removed the diseased bone two years ago. The patient survived the operation six months. This last-named specimen, which had been macerated in warm water for three months, exhibited the early stage of caries; the disease had only existed eighteen months; the globular shape of the head was unchanged, but it was carious (honey-combed) all over. The neck of the bone was altogether unaffected; it remained of the usual length, and at the ordinary oblique angle with the head. In the other case, the disease had been in existence six years, and the head of the bone was completely flattened out, the neck being almost destroyed. Instead of an oblique arch, it presented a right angle with the head. In his own case, all the symptoms of dislocation of the head of the femur existed, and the operation proved his diagnosis to be correct. In Mr. Morris's case, it was supposed that dislocation had taken place, but this was proved not to be the case, when the operation was performed. A difficulty was experienced in dislocating the head, owing to a small piece of bone, which had separated from it, and lay in one of the sinuses. It was this which caused the symptoms simulating dislocation. There was very great shortening of the limb, in consequence of the destruction of the neck of the bones. He had often been asked as to the manner in which locomotion could be performed without a hip-joint: but when the head of the femur was excised, a new joint might soon be formed. After the removal of the diseased bone, inflammation set in, lymph was thrown out in the acetabulum, (if healthy) the head of the femur became rounded off, and fibrous tissue was formed, from which resulted an entirely new capsule. Mr. Morris's patient was able to flex the mutilated thigh on the pelvis, as readily as the other, seven weeks after the operation. He had seen, a few days since, a woman who had been operated on by Mr. Fergusson a year ago; she was able to walk, with the aid of a high-heeled shoe, without a crutch.

At a subsequent meeting (February 2d) of the same society, Mr. HAYNES WALTON exhibited three specimens of caries of the head of the femur, removed during life, to show the alteration in form and structure, effected by morbus coxarius. The first was taken from a girl, nine years old. In place of the head and neck, there was a rounded and spongy portion of bone, projecting little more than half an inch from the femur. She made a good recovery. The second was from a lad, twenty years old. The head was nearly gone; the neck was of the natural size, but so soft that it broke in two during the operation. The third was from a boy, eleven years old. Part of the head was lost, and the neck was shortened and reduced in size. Mr. Walton was anxious to discover some diagnostic signs by which dislocation could be ascertained. The change in the form of the bones he had shown, would cause all the symptoms of dislocation. The limb would be shortened and the trochanter elevated, and brought nearer the pelvis. From the position of the limb, nothing could be learned; it may be turned inwards or outwards; and the thigh may be flexed on the pelvis or extended.—*London Journal of Medicine*, March, 1850.

34. *Case of Perineal Abscess in which the pus made its way into the scrotum.*—Mr. RUMLEY related to the Surgical Society of Ireland (March 23d) the particulars of a remarkable case in which purulent matter, unconnected with urinary extravasation, made its way from the perineum into the scrotum. The chief circumstances of the case were the following:—A man, who was engaged as a clerk in a solicitor's office, called at his house on the 19th of March, 1850, and told him that he had suffered from severe pain about his fundament, as he termed it, during the last five or six days, and that he was apprehensive he was

* This case has been published by Mr. Morris in the *Provincial Medical and Surgical Journal* for February 6, p. 57, as well as in other periodicals.

about to get a fistula. On making an examination, he found between the tuberosity of the ischium and the ramus of the pubis a tumour, which was red, painful, and fluctuating. There could be no doubt at all that matter had collected in this situation, and accordingly he advised the man to have it opened without loss of time. He declined to allow the operation to be performed then, having some pressing business to transact in the Four Courts; but on arriving there, the tumour became so painful that he was obliged to take a car and return home. On the way home, the wheel of the car came against a brick, but the jolt he received caused him scarcely any pain, and in fact from that moment he could sit much easier upon the car. At half past five on the following morning, a messenger called at his house to say that he was exceedingly ill, and was suffering from violent pain in the scrotum. On throwing back the bed-clothes, he remarked that the scrotum was very much enlarged, reddened, and tender to the touch. On examining the perineum, the tumour he had seen there on the previous day was nearly gone, but the part still retained more or less of a doughy feel. It now occurred to him for the first time that the matter which had formed the perineal tumour might have found its way into the scrotum. He was at a loss to account for the manner in which it had got there, but still thought it would be right to make an incision into the perineum, on doing which exit was given to a small quantity of a rather good description of matter. On the following morning he again saw the man, but he did not deem it necessary to make any further use of the knife on that day. When he called on the next morning he observed a small blue spot upon the scrotum, about the size of a fourpenny piece, and he then made an incision into the scrotum, and gave discharge to a small amount of matter. Two days later a slough appeared on the scrotum, and in fact a large portion of the cellular substance beneath the integuments had sloughed away. During the whole progress of the case there were none of the signs of urinary irritation present. It was usually imagined that purulent matter was so innocuous that it would not destroy to any great extent the tissues with which it came into contact; but in this instance a considerable amount of destruction had taken place, though not by any means to such an extent as he had seen in other cases. In this case the patient lost a portion of his scrotum of about the size of a half-crown piece. From day to day the patient became better and better; granulations started up from the tunica vaginalis, and he was then, he might almost say, completely recovered, having some days since returned to his usual avocations. He thought the case interesting from this circumstance, that if he had not seen the man on the day he first called upon him he was almost sure he would not have taken such a decisive view of the case as he had: for if he had not seen him till the following day, he would not have found sufficient evidence in the perineum to convince him that the mischief was situated there; but having in the first instance seen the tumour in that locality, and this having disappeared before the next morning, he was at once led to adopt a safe and certain line of conduct.

DR. BUTCHER mentioned the following additional facts, which appear to bear out the inferences of Mr. Rumley. On pressing the perineum with the fingers, the matter which had there accumulated could be forced along the expanded perineum towards the opening in the scrotum; in fact, it could be made, by means of pressure, to waive backwards and forwards between the perineum and the scrotum. Again, during the examination, the man passed water in a full stream, and of course had any communication existed between the urethra and the abscess, it was almost certain that a portion of urine would have got through; but in point of fact he could propel his water to a considerable distance from the orifice of the urethra, proving that the muscular power was quite strong enough to have caused extravasation of urine, if an aperture had existed in the urethra. —*Dublin Med. Press*, April 10, 1850.

35. *A Remarkable Case of Relapses in Cancer.*—A woman named Valens, æt. 42, entered the Hôtel Dieu under M. Jobert, October 30, 1849. She was married at 19, and had been pregnant eight times, and her menstruation is, and has always been, normal. Her health was quite good until 1834, when she observed a small tumour under the right superciliary ridge, and as it gave her severe

pain, it was (in August) removed, when only the size of a grape seed. The wound readily cicatrized. Between November 1834 and April 1835, a similar tumour was developed in the same spot, causing severe shooting pains, as well as throbbing of the eye. M. Cloquet removed it, as well as the lachrymal gland, into which the prolongations of the morbid tissue extended. At the end of a month all had healed, and for two years nothing else exhibited itself. She was in perfect health, when three little tumours were observed in precisely the same spot, and now implicating the periosteum; the pains, too, having become much more intense than those accompanying the others. Moreover, the lachrymal gland being removed, there was no secretion of tears, which occasioned a very severe burning pain. The eye was very much swelled. She bore with her sufferings for three years, and only entered La Pitié, under Lisfranc, in 1842. He removed the tissues proceeding from the old cicatrices, and the three little tumours, another that could be felt in the larger angle of the eye, one deeply imbedded under the superciliary arch, one covered by the bone at the external angle, and still another, adhering to the optic nerve. After this operation, she found her sight much impaired, and her vision double. The wound healed in twenty-six days, and all pain departed. The periosteum, and a portion of the osseous substance to which the tumours adhered, were removed.

She continued quite well for a year, when another little tumour appeared just above the caruncula lachrymalis, and was accompanied with the same pains as heretofore. A pupil of M. Lisfranc's removed the tumour, and the patient had two more years of rest. At the end of that period, however, the eye became again very painful, the seat of suffering being referred to the back part of the orbit, while a new tumour appeared at the place whence the last had been removed. Four years she bore her suffering; when, the pain having at last become quite insupportable, and the power of distinguishing objects by the eye lost, she placed herself under M. Jobert, in April, 1849. He extirpated the entire eye, the little tumour being removed with the conjunctiva. Cicatrization readily took place, and all pain ceased. Three months after, however, the unfortunate woman applied on account of another tumour extending under the orbital surface of the lower eyelid. This, too, was extirpated in November, 1849, and the wound perfectly cicatrized.

If the resources of art have not been, in this curious case, as complete as might be desired, it cannot be doubted that they have procured for the patient several years of tolerable comfort, and have prolonged her life.—*British and Foreign Medico-Chirurgical Review*, from *Gazette des Hôpitaux*, 1849, No. 143.

36. *On Femoral Hernia*.—M. MALGAIGNE has recently published an interesting series of papers upon femoral hernia, a few passages from which we here transcribe.

The differential diagnosis of Femoral and Inguinal Hernia.—Where the track of the hernia is distinct, there can be no difficulty in distinguishing between these; but sometimes, though very rarely, cicatrices or bands induce a deviation of this. Much oftener, in their early stages, the inguinal or femoral hernia, separated from each other only by the thickness of the Fallopien (Poupart's) ligament, intrench more or less on this, either on the one side or the other, and then the track of the hernia becomes doubtful. It becomes of importance, therefore, to observe the exact position of the two rings. The femoral ring is situated somewhat more externally than the inguinal, and is bounded on its outer side by the femoral artery, the pulsations of which are always perceptible, above by the Fallopien ligament, and below by the pubis. The inguinal ring, in its normal state, is bounded by its two pillars above and below, and has no artery on its external side. We find the femoral ring by passing the finger along the inner side of the artery, backwards and upwards, until it rests on the pubis behind, and is arrested by the Fallopien ligament above. The inguinal ring is found by feeling for the spine of the pubis, into which its lower pillar is inserted.

When we have to do with a hernia of doubtful nature, we should return it, and observe at which aperture it disappears. Sometimes the return takes place too rapidly for this to be remarked, and we should then apply a finger at one of

the apertures, while the patient makes an effort to reproduce the hernia. If we feel it tend to escape by the one aperture, or it succeeds in doing so by the other, all doubt is removed. In this way I have seen the nature of a very difficult case decided. A young woman consulted M. Marjolin for a small tumour in the groin, which appeared and was returned from time to time. When M. Marjolin placed his finger on it, it disappeared so suddenly that he was unable to observe its course, and all attempts to cause it to reappear proving unavailing, he sent the case for my opinion. I know of no example of an inguinal hernia refusing to reappear after reduction, except in the case of congenital hernia of young subjects; and as, on making this patient cough, nothing appeared at the inguinal ring, while a strong impulse was felt at the femoral ring, I had no doubt of its being a femoral hernia.

When a hernia is irreducible, it may so ride over the Fallopian ligament as to prevent this being felt, while the raised state of the skin prevents the finger reaching the rings in a direct manner. More than one operator has discovered the true nature of such a hernia, only after the exposure of the neck of the sac. If we push down the skin somewhat at the upper and inner part of the tumour, we may often reach the spine of the pubis, and judge whether the inguinal canal is occupied by a hernia, and the same manœuvre repeated at the lower and middle portion of the hernia allows us to examine the condition of the femoral ring.

Sometimes the inguinal ring is so widened that the finger passed into it feels the iliac artery beating on its external side, the relaxed Fallopian ligament allowing it also to reach the pubis; so that we have some of the characters of the femoral ring present. But the femoral ring never acquires this size, and, on exploring the inner side, we arrive directly at the spine of the pubis, while, at quite the external extremity, the Fallopian ligament, relaxed as it may be, resists the finger, and prevents its reaching the pubis.

So much for hernia which quit either of the canals; but other difficulties arise from interstitial hernia. A tumour is observed towards the middle of the bend of the groin, but rather nearer the pubis. It is deep-seated and ill-circumscribed, projects when the patient coughs, but comes out or goes in with such rapidity that its course cannot be followed. The inguinal canal is free, but the hernia yet seems to lie in its direction. If we try to follow the course of the Fallopian ligament, it is flaccid and felt with difficulty, and seems to be situated at about the middle of the tumour, at the level of which it offers no appreciable resistance. Lastly, if we draw a straight line from the superior iliac spine to that of the pubis, the tumour is found in part or entirely below this. In many cases, an exploration of the femoral ring settles the question as to which of the rings the hernia issues from; for if, on the patient's coughing, a sharp impulse is felt by the finger placed over this, without any external swelling being produced, it is a femoral hernia; while, if the finger feels no such impulse, and a hernia appears above, it is inguinal. But we sometimes observe, especially in women whose abdominal parietes have become much distended from child-bearing, an inguinal interstitial hernia, that so depresses the Fallopian ligament as to transmit an impulse to the finger placed below it; while, on the other hand, a femoral hernia sometimes so raises it as to produce a sensible projection above when we close the femoral aperture. In such a case, we place the thumb across the inguinal canal, so as absolutely to close the internal inguinal ring, and leave the femoral ring quite free. The patient coughs, and if the hernia is inguinal, nothing can escape, and the index-finger placed below the femoral ring receives no impulse; but if the hernia is femoral, the finger is pushed back by the advancing tumour.

The Influence of Sex in the production of Femoral Hernia.—After adverting to the statements of Morgagni, Sandifort, Scarpa, and others, of the almost complete exemption of the male sex from femoral hernia, M. Malgaigne observes, that, however seldom such cases may present themselves in small hospitals, there is no lack of them in the hospitals and dissecting-rooms of Paris. J. Cloquet found, that, of 258 hernial tumours situated in the groin in men, 203 were inguinal and 55 crural, *i. e.*, 1 to 4; but, as no other observer has seen this proportion, accident may have led to its production in this series of cases.

In regard to M. Malgaigne's own experience, he saw, in October and November, 1835, at the Bureau Central, 330 male subjects with hernia of the groin, and of these only 14 had femoral hernia, and 9 of these even had, at the same time, inguinal hernia. Counting the herniæ instead of the subjects, there were 515 inguinal to 16 femoral (about 1-35th). During the five years he remained at the Bureau Central, the proportion continued much the same, or rather less. As, owing to the small size of femoral hernia, many persons affected by it might take it for something else, and, therefore, not apply at the bureau for a truss, M. Malgaigne instituted an examination at Bicêtre, and there he found 14 femoral herniæ to 90 inguinal (1-6th). This examination was continued by M. Roustan, who found, in 1043 hernia cases, 953 inguinal, 22 femoral, and 22 both femoral and inguinal. Counting the herniæ, there were 1335 inguinal to 65 femoral (1-20th). It is to be observed that the great bulk of these persons were above 40 years of age; and M. Malgaigne, from his general observation at different ages, believes the proportion to be 4 or 5 per cent.

The fact of the greater liability of *women* to femoral hernia is incontestable; but M. Malgaigne has long opposed the statement that, even in *women*, more femoral than inguinal herniæ exist. During his first investigation of the subject, in 1835, he found that of 62 women, 53 had inguinal and 8 femoral hernia; and, although this enormous disproportion has never been reproduced, yet, with the most scrupulous care in the diagnosis, he has never found the number of femoral *equalling* those of inguinal herniæ; and several of his colleagues at the Bureau Central, induced by him to reinvestigate the subject, have arrived at similar conclusions. In May and June, 1840, 57 women were examined at the bureau, and of these 32 had inguinal, 22 femoral, and 3 both femoral and inguinal herniæ. Counting the herniæ, there were 47 inguinal to 32 femoral. In 1837, MM. Nivet and Manec stated that, of 116 herniæ of the groin occurring among the old women at the Salpêtrière, 67 were femoral, 40 inguinal, and 9 of doubtful nature. M. Malgaigne, surprised at this statement, induced M. Manec, in 1840, to undertake, with him, a careful reinvestigation. During this, 93 women were found with herniæ of the groin, and these were most carefully and repeatedly examined, with the result of showing that 54 had inguinal, 35 femoral, and 4 both inguinal and femoral herniæ. The general result of his observations leads him to believe that a third or a fourth more inguinal than femoral herniæ are met with in women. As illustrative of the fallacy of relying upon small numbers, he says that, during his first examination with M. Manec, 18 women were presented, 10 having single or double femoral hernia, 4 inguinal, and 3 femoral and inguinal. At the second visit, 4 women were seen, in *all* of whom the herniæ were inguinal. In counting the herniæ, the first visit furnished 14 femoral and 9 inguinal; but the second visit brought them to an equality.

Influence of Age. Femoral hernia is essentially an affection of adult life. M. Malgaigne has only seen two examples of its occurrence prior to twenty, in one of which it was said to have come on during infancy, and in the other was produced at eight years during pertussis. Sir A. Cooper has seen cases at the respective ages of seven, eleven, and nineteen. M. Nivet states that he has seen five such cases, but his diagnosis was probably at fault. It has been observed in the fœtus. This circumstance distinguishes it broadly from inguinal hernia; for, of 135 cases of this observed by M. Malgaigne in women, it occurred prior to the first year in 12, and between the first and twentieth year in 17. The age of twenty once reached, the two kinds of hernia seem to be alike influenced as regards age.

Predominance of the right side. In 313 inguinal hernia occurring in *men*, M. Malgaigne found that 171 appeared primarily on the right, 102 on the left, and 40 simultaneously on both sides. In *women*, the predominance was slightly on the left. Thus, of 133, 51 occurred on the right, 60 on the left, and 22 on both sides. J. Cloquet also found 23 on the left to 19 on the right; but he and M. Malgaigne are the only observers who have arrived at this result. In femoral hernia, the *right* side predominates. Thus, in 67 women, 36 had it on the right side, 25 on the left, and 6 on both sides.

Secondary Hernia. M. Malgaigne claims the merit of having first pointed

out the singular predisposition which *inguinal* hernia, at least in men, exerts in the production of hernia of the opposite side. Thus, in 274 cases of primary hernia, secondary hernia had occurred in 144 at the time of examination; and in two-thirds of these the second hernia had become spontaneously developed without the person being able to assign any cause. As women resist the original production of hernia more than men, so are they less liable to its secondary formation. Of 114 persons suffering from primary inguinal hernia, in 26 only were secondary herniæ observed; and of these the lesser number had formed spontaneously. Of 12 men suffering from primary *femoral* hernia, in 6 no secondary hernia had yet become induced after from ten to fifteen years. In 3 of the other six, crural hernia on the other side had followed, and in the other 3, inguinal hernia. In *women*, 61 primary crural herniæ had been followed by 9 secondary crural, and 3 secondary inguinal herniæ.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Revue Médico-Chirurgicale*, tom. vi.

37. *Cases of Vascular Tumour of the Urethra, with Remarks.* By H. B. NORMAN, F. R. C. S.—In this pamphlet the author records ten cases of vascular tumour in the female urethra, five of which he saw himself, and the others being selected from published works. From the consideration of these cases it appears—1st, that no part of the female urethra is exempt from attack; 2dly, that it may vary in size from a simple large granulation to the bulk of a turkey's egg, although a small size is far more common than a large one; and that, whether sessile or pediculated, they are sensitive in the highest degree; 3dly, that in structure they consist of hypertrophied papillæ, invested with a thick layer of cuticle, and are abundantly supplied with vessels and nerves; 4thly, that they are not cancerous; 5thly, that they tend to reproduction on removal; 6thly, that they occur in both married and single, and at all ages; 7thly, that sexual abuses and syphilis cannot be shown to originate them; 8thly, that urethral pain, augmented by micturition, coition, walking, &c., suppression of urine from dread, or, on the other hand, frequent micturition from vesical irritation, more or less vaginal discharge, and, occasionally, lumbar, pelvic, and femoral pain, with a discharge of blood from the canal, are its ordinary symptoms, rendering the physical examination of the passage to the bladder the more important as the symptoms might lead to a suspicion of a calculus in that receptacle; 9thly, that, somehow, this state has been mistaken for prolapsus uteri, but that any error of diagnosis can scarcely occur when a visual or tactile examination is instituted; as regards the last, Mr. Norman points to the fact, which we imagine the profession to be scarcely aware of, that the finger may readily be introduced along the meatus urinarius, so as to allow of its entire length being investigated, and any morbid growths at the neck of the bladder being detected; 10thly, the treatment recommended is removal by ligature rather than by excision, touching the spot, after separation of the growth, with a powerful cautery, as the potassa fusa; when small and near the orifice, they may be removed by touching with the last named caustic, nitric acid, or the pernitrate of mercury, and when they affect the interior of the canal generally, bougies are highly serviceable applications.—*Provincial Med. and Surg. Journ.* March 20, 1850.

38. *Rupture of the Urinary Bladder.*—Rupture of the bladder is an accident of interest not only in a medico-legal, but also in a surgical point of view. In our preceding No., p. 383 *et seq.*, will be found an interesting case of this accident recorded by Prof. Peaslee, and as a further contribution to the history of this injury, we subjoin the following cases recently communicated to the Pathological Society of London (Ap. 1, 1850.)

In the first case, which was related by Mr. SOLLY, the rupture was occasioned by a blow on the abdomen, the patient not having made water for five hours previously. He was admitted into St. Thomas's Hospital seventeen hours after the accident. About two quarts of urine were drawn off.

Post-mortem examination, Feb. 26th, 1 P. M.—Head not examined. Thoracic viscera healthy. Abdomen: the peritoneum covering the abdominal viscera generally, but more particularly the small intestines, was irregularly congested

in patches; and on the surface of some of the congested portions was a small quantity of recent lymph, in thin adherent flakes; this was more particularly seen on the convolutions of the small intestine contained in the pelvic cavity. The parietal peritoneum was healthy, with the exception of slight patches of congestion. In the peritoneum, over the posterior part of the bladder, was a longitudinal rent of an inch and a quarter in length, corresponding to which the muscular and mucous coats of the bladder were lacerated to the same extent; so that a catheter readily entered the peritoneal cavity. The peritoneum in the immediate neighbourhood of the wound, from half to three-quarters of an inch beyond its edges, was coated with a layer of adherent plastic lymph; the membrane was congested for an inch or more beyond the lymph, but there were no other indications of peritonitis. The cavity of the peritoneum contained from two to three ounces of what appeared to be urine, rendered turbid by the admixture of a small quantity of lymph, of which a little floated in the fluid. The bladder was firmly contracted. The thick edges of the wound were coated with adherent black coagulum. Liver and kidneys healthy. Mr. Solly remarked that in a similar case he should puncture the pelvic *cul-de-sac* of the peritoneum, as recommended by Harrison, of Dublin.

Mr. PRESCOTT HEWETT, in connection with the last case, brought forward ten cases of ruptured bladder, which, with one exception, occurred at St. George's Hospital within the last few years.

The *first* was a specimen of extensive rupture of the apex of the bladder into the cavity of the peritoneum, from a man, æt. 35, who lived two days after the accident. On his admission into the hospital, under Mr. Hawkins, a catheter was passed, and a large quantity of bloody urine drawn off; he was then in a state of collapse, from which he never rallied. The urine, which continued to be bloody, was always drawn off without any difficulty. At the post-mortem examination, extensive fracture of the pelvis was discovered, and this laceration of the bladder, which measured about two inches in length, and an inch and a half in breadth. The bladder itself was contracted, and in its cavity were some small clots of discoloured blood. No marks of inflammation were found in the peritoneal cavity. An ounce only of turbid fluid was discovered in the *cul-de-sac*, between the bladder and rectum. The other parts were healthy.

The *second* specimen was also one of rupture of the bladder into the peritoneal cavity taken from a *woman*, whose husband, in a quarrel, threw her down, and knelt upon her abdomen with great force. She immediately became sensible of having sustained some severe internal injury, and died twenty-four hours afterwards, in excruciating agony. In this case there were two lacerations: one of which, about half an inch in length, led into the cavity of the peritoneum; and the other, about two inches in length, into the cellular tissue of the pelvis. The preparation is in Mr. Cæsar Hawkins's museum.

The *third* specimen was one of rupture of the forepart of the bladder, immediately behind the pubes, caused by a man jumping on the abdomen of the patient when he was on the ground: he lived twenty-three days after the accident. Æt. 50, he was admitted into the hospital, under Mr. Tatum, two days after the injury, with an anxious countenance, and great pain and extension over the lower part of the abdomen, accompanied by great difficulty in passing his water. A catheter was passed, and a pint of bloody urine drawn off. The necessary treatment was adopted, and he appeared to be going on pretty favourably for some days, at the end of which time three distinct tumours, presenting evident but deep-seated fluctuation, made their appearance: one of these tumours was in the mesial line, immediately above the pubes, and the other two in the iliac regions. On the twelfth day after his admission, a free incision was made into the lower part of the left iliac region, letting out about three pints of fetid pus, with large sloughs. This was followed by a marked amendment, which lasted but a few days. The wound put on an unhealthy appearance, and the urine, which had for several days been passed without inconvenience, now flowed freely through the wound in the left iliac region. At the post-mortem examination, the peritoneum was found extensively stripped off from the parts in the neighbourhood of the bladder, as well as from both iliac fossæ, and from the

walls of the abdomen, as high as the umbilicus. The cellular tissue in these various regions was in a sloughy state, and filled with large quantities of foul matter. The bladder presented, in its forepart, a rupture of about an inch in length and half an inch in breadth, which led into a perfectly circumscribed cavity in the surrounding cellular tissue, the walls of which were so thick and so well formed that, at first sight, it appeared like one of the sacculi so frequently met with in this organ. Towards the lower part of this cavity the wall of the cyst had, however, become detached from the margins of the rupture, so that here there was an opening through which the tip of the little finger was easily passed into the cavity of the bladder. The bladder itself was very much contracted, and its mucous membrane, of a dark colour, was in various parts covered with lymph containing a sandy deposit.

The *fourth* was also a specimen of rupture of the forepart of the bladder into the cellular tissue; in connection, however, with fracture of the pelvis. The patient, *æt.* 12, was admitted, under Mr. Cutler, in a state of collapse, some twenty hours after the accident—heavy iron railings having fallen on the lower part of the abdomen. No urine having been passed, a catheter was introduced, and a small quantity of bloody water was drawn off. The belly became tympanitic, and tension, swelling, and redness made their appearance in the lower part of the abdomen, in the scrotum, groins, and upper part of both thighs. These symptoms were soon followed by delirium and low fever, and he died six days after the accident. At the post-mortem examination, the bladder was found to be ruptured in two different places, in its forepart. The margins of the ruptures were sloughy, and sufficiently large to allow of the passage of a large bougie. Urine had been extensively infiltrated into the cellular tissue of the pelvis, and some of it had made its way into the upper part of both thighs, scrotum, &c., by passing through the obturator foramina. Large sloughs existed in various parts; the pelvis was extensively fractured, and a small quantity of blood was found in the cavity of the peritoneum.

The *fifth* specimen was one of rupture of the lateral part of the bladder into the cellular tissue, in connection with extensive injury of the pelvis. The patient, a middle-aged man, was under Mr. Hawkins, and died twenty-two hours after the accident. The laceration, about one inch in length and half an inch in width, was situated on the left side of the bladder, and led into the sub-peritoneal cellular tissue, where there was extensive effusion of bloody fluid. The urine, which was drawn off shortly after the patient's admission, was bloody.

The *sixth* case was one of rupture of the neck of the bladder, in connection with extensive fracture of the pelvis, from a man, *æt.* 38, who was admitted under Mr. Keate, and died five days after the accident. The two anterior thirds of the neck of the bladder were completely separated from the prostatic portion of the urethra. The cellular tissue of the pelvis, as well as that in the hypogastrium, iliac regions, upper part of both thighs, and right side of the scrotum, was in a sloughy state, and infiltrated with pus and urine. The extravasation was traced, on the right side, through the internal ring and inguinal canal down into the scrotum; but there was no extravasation towards the perineum. The bladder itself was extensively inflamed, its mucous membrane being of a dark colour.

The *seventh* was a rupture of the bladder in connection with extensive laceration of the symphysis pubis. The rupture, which was on the right side of the organ, was large enough to admit a good-sized quill; it led into a small perfectly circumscribed cavity, formed in the surrounding cellular tissue, by the effusion of lymph. Beyond this adventitious pouch the cellular tissue was extensively infiltrated with sanious fluid. A little above this rupture there existed appearances which looked like a smaller rupture blocked up by lymph. The mucous membrane of the bladder was inflamed, and in patches covered with lymph. The patient, *æt.* 32, was admitted under Mr. Keate, the wheels of a chaise, out of which he had fallen, having passed over the lower part of the belly, some twelve hours before his admission. The urine which was drawn off was bloody; pain and tension of the belly soon made their appearance, typhoid symptoms set in rapidly, and he died on the 4th day.

The *eighth* was a rupture of the forepart of the bladder, leading into the sub-

peritoneal cellular tissue, in connection with extensive injury of the pelvis and dislocation of the hip, produced by a piece of timber falling on the patient's back. The man *æt.* 32, was admitted under Mr. Hawkins, and lived four days after the accident. Shortly after his admission into the hospital, the cellular tissue of the scrotum, perineum, and lower part of the abdomen began to swell, and then assumed a dark colour. A catheter was passed into the bladder at three different times, but no urine was found there. Mr. Hawkins having subsequently introduced a catheter, made a free incision into the urethra, and several others also into the inflamed parts, through which urine escaped freely. The wounds ultimately took on a sloughy character, and he died in a low muttering delirium. Besides extensive fracture of the pelvis, there was a rupture in the forepart of the bladder, immediately behind the symphysis pubis, of the size of the end of the little finger. Between the bladder and pubes there was a large cavity, containing coagulated blood, urine, and pus, the peritoneum being stripped off nearly as high as the umbilicus. With the exception of some slight adhesions between this part of the serous membrane and the omentum, there were no traces of inflammation about the peritoneum.

The *ninth* was a rupture of the bladder in its forepart, just below the reflexion of the peritoneum. The laceration was about an inch in length, and had given rise to extensive infiltration of urine and blood into the surrounding cellular tissue, the peritoneum being stripped off from the wall of the belly as high as the umbilicus. The patient, a man *æt.* 46, was admitted under Mr. Hawkins, having been kicked by a horse on the lower part of the belly about five hours before. The urine which was drawn off was mixed with blood. Rigors and great pain in the belly soon supervened, and he died fifty-eight hours after the accident.

The *last* was also a rupture of the bladder external to the peritoneum, but in connection with separation of the symphysis pubis and fracture of the pelvis. The bladder was ruptured immediately behind the pubes. The man, *æt.* 34, was also under Mr. Hawkins; he had fallen from a great height, and died two hours after his admission into the hospital.

In the observations on the preceding cases, attention was drawn especially to the following points:—In two of these ten cases there was no injury of the bones; in eight, the pelvis was extensively fractured. In two cases the bladder was ruptured into the peritoneum (one being with fracture of the pelvis, the other without). In eight cases the rupture was into the cellular tissue of the pelvis; in these eight cases the bladder was ruptured in its forepart in five, in its lateral parts in two, at its neck in one.

Both the cases into the peritoneum were most interesting; the one from its rarity, the injury having occurred in a woman, of which there are very few cases indeed placed on record; the other, from there being so small a quantity of fluid found in the peritoneum, merely an ounce, and yet the rent in the bladder was large enough to admit of the passage of the two first fingers, as well as from there being no trace of inflammatory action about the serous membrane.

The variety of points at which urine extravasated into the sub-peritoneal cellular tissue might show itself was also well illustrated in some of these cases. In one, the patient living twenty-three days, large abscesses made their appearance above the pubes, and in both iliac fossæ. In another, in addition to these regions, the scrotum and perineum became extensively infiltrated. In a third, the right side of the scrotum was the part principally affected, the urine having passed through the right internal ring, and down the inguinal canal. In a fourth, the upper part of both thighs was affected, the urine having made its way through the obturator foramina.

Lastly, the reparative efforts sometimes made by nature in accidents of this kind were also well shown. In a patient who lived five days after the accident, the cellular tissue in the immediate neighbourhood was condensed by lymph, forming a species of pouch connected with the margins of the rupture. In another case, living twenty-three days after the injury, the surrounding cellular tissue was so condensed, and so firmly attached to the margins of the rupture, except at a small point, that the secondary cavity thus formed presented

the appearance of a sacculus of the bladder which had given way. With regard to the point where the lymph was detached, Mr. Hewett thought this appearance was due to the tearing off of the false membrane during some efforts made by the patient: the history of the case he considered showed this. An aggravation of symptoms suddenly takes place, and the urine, which for several days had been passed without inconvenience or effort, now makes its appearance in the incision in the iliac fossæ, and henceforth flows freely through the opening.—*London Med. Gaz.*, April 26, 1850.

The following very interesting case of this accident is recorded by Mr. W. H. STAPLETON in the *Dublin Quarterly Journ.*, Feb. 1850. Charles Scarlett, aged twenty-two years, unmarried, by occupation a labourer, was admitted into Jervis-street Hospital on the 30th of September, 1849.

Whilst working the Panorama at the Rotunda, on Saturday evening, the 29th inst., being in a state of intoxication, he fell about the height of twelve feet from a ladder, and said that he came upon his feet. He was brought to the hospital in a car. Upon examination by the resident pupil no injury was apparent, nor did he complain of any, with the exception of a small cut on the elbow, which being dressed, he was brought home; and the persons with him were directed to bring him next day to the hospital, should he, when sober, find that he had suffered any other injury.

On Sunday, the 30th inst., he walked from his lodgings in Britain street to the hospital. On his admission he said that he was in great agony with pain in his belly, and that he had passed no water since before the occurrence of the accident; that his stomach had been very sick during the night and morning, having a frequent inclination to vomit and also to evacuate his bowels, neither of which was he able to accomplish; he also complained of great headache and thirst. His countenance was pale and anxious; the pulse quick and feeble; the extremities cold.

The catheter was now introduced, and about two ounces of dark-coloured urine mixed with blood drawn off. He was then put to bed, when, on examination, the abdomen was found tense and extremely painful on pressure. The catheter was again introduced, and a small quantity of clear urine drawn off. A laxative enema was prescribed, as his bowels had not been opened for some days previously, and also to relieve the tenesmus, which was very troublesome. It acted satisfactorily. Twelve leeches were then ordered to be applied over the region of the bladder, and the parts to be afterwards fomented: two grains of calomel and half a grain of opium to be given every third hour.

October 1st.—He was seen by Dr. Stapleton for the first time at 9 A. M. He was then sitting up in bed, with his chin almost upon his knees, complaining of intense pain in his abdomen, which prevented him from lying down. The pulse was small and scarcely to be felt, and the extremities cold and blue, although he was enveloped in blankets, and heaters had been applied to his feet. He had refused during the night to allow the application of the fomentations, as he said the pain was increased by the slightest pressure. The catheter was introduced, and a small quantity of transparent limpid urine drawn off. He stated that on getting up to the night-chair (which he had been frequently obliged to do on account of the desire he felt to go to stool), he each time passed water. Leeches were again ordered to be applied over the region of the bladder, and after their removal the abdomen to be covered with a warm poultice. He was to take a grain of calomel and a grain of opium every second hour.

October 2d.—He was now troubled with diarrhœa. The calomel was omitted, and a grain of opium given every second hour, the abdomen fomented with warm water and turpentine, and the poultice re-applied after each fomentation.

In the evening he was under the influence of the opium, and was able to lie down and stretch out his legs. The opium to be continued according to the effects produced.

October 3d.—Diarrhœa and tenesmus still urgent. Starch and opium injection were prescribed. In the evening, the diarrhœa and tenesmus still continued unabated; he could allow pressure on the abdomen, and, although in a drowsy state, complained of want of sleep. Acetate of lead and opium injections were now ordered.

October 4th.—Diarrhœa and tenesmus still unabated, and the abdomen enlarging. Complains greatly of want of sleep, and begs to have opium pills, which were given every second hour.

In the evening hiccough had been added to the other symptoms, and the pulse could not be felt in one arm. He was still able to get up to the night-chair (obstinately refusing any assistance in bed). A blister to the epigastric region was ordered, and a mixture of camphor and sulphuric ether given occasionally.

October 5th.—Is evidently sinking rapidly, although he speaks with a firm voice and is able to get out of bed without assistance. The pulse has failed at the wrist.

The catheter was introduced at intervals, and scarcely an ounce ever came away at one time.

He died at about 3 o'clock, P. M.

The body, when examined on the morning of the 6th, presented the following appearances. The abdomen was tumid, but no sign of ecchymosis was apparent. On opening the cavity of the peritoneum a large quantity of fluid escaped. The intestines were not much distended, but were preternaturally vascular. There were a few very slight adhesions, but no gluing together of the intestines. The liver was nodulated, and presented several old adhesions on its anterior surface; the omentum was very vascular, and lay in a shrivelled mass across the upper part of the abdomen, presenting no appearance of lymph on either surface. The intestines were easily turned out (there being but few and very slight adhesions) from the pelvic cavity, which contained about a pint of a turbid fluid, having a strong ammoniacal odour.

The fluid being removed, the peritoneum was found coated thickly with lymph. The bladder did not extend above the pubis. An elastic catheter having been introduced through the urethra, air blown into the bladder was found to escape, bubble by bubble, from its upper and posterior part. The lymph being removed, a transverse but rather oblique rent was found in the peritoneum of about three-quarters of an inch in length, that in the bladder being of greater extent; its edges were jagged, thickened and extremely vascular. There was no discolouration of the peritoneum in the neighbourhood of the rectum, but, on examination, the surrounding areolar substance was much inflamed.

From the appearances on dissection it was evident that nature had gone far in this case towards the accomplishment of a cure of the ruptured bladder; and I am inclined to think that had the man in the first instance drawn attention to the injury received he might have recovered. In similar cases I would be disposed to rely more upon the opiate treatment, in combination with leeching or general blood-letting, than upon the use of mercurials. I would not recommend a catheter to be left in the bladder, but would have it introduced at proper intervals, and not farther than was absolutely necessary just to enter the bladder. It should be also borne in mind that there is but little secretion of urine in acute peritonitis, and, in addition, the constant tenesmus which is always present, and might almost be said to be pathognomonic of this accident, induces the patient frequently to empty the bladder, although ruptured. In the ninth volume of the first series of this Journal there is a very able and valuable paper by Professor Harrison on rupture of the bladder, in which he advises tapping of the pelvic *cul-de-sac* through the rectum. This operation, recommended by so high an authority, has been, as far as I am aware, never yet tried, nor would I wish to give a decided opinion against it, yet I cannot avoid remarking that the effects of the accident are, in its first moments, insidious, and have proceeded to a destructive extent internally before its nature is suspected by the sufferer. Moreover the operation is not recommended by the learned professor "till the *cul-de-sac* is distended with fluid coated with lymph, and well protruded towards the rectum." When such is the state of the patient, I fear the operation will not be followed by the happy result he expects.

39. *Case of Gunshot Wound, and subsequent Extraction of a Bullet from the Bladder.* By E. M. MACPHERSON, Assistant-Surgeon 9th Lancers. (Proceedings of Royal Medical and Chirurgical Society, March 26, 1850.)—A private in H. M. 24th Regiment was wounded (at the battle of Chillianwallah, on

the 13th of January, 1849) in the left buttock: severe pain was immediately felt in the testicle on the same side: the ball could not be found, but the wound healed without difficulty: no blood was ever noticed in the urine. Symptoms of disturbance of the bladder shortly afterwards set in, which not yielding to remedies the bladder was examined, and a foreign body detected; and on the 30th of August the lateral operation, as if for the removal of a calculus, was performed: an iron ball was extracted, which had become encrusted with a thin layer of sandy deposit. To the above case Mr. Dixon added notices from various writers of fifteen operations for the extraction of balls, which had either primarily entered the bladder, or, having lodged in the immediate neighbourhood, had made their way into its cavity. Mr. Dixon had been favoured by Mr. Cusack, of Dublin, with a notice of a similar operation performed by him, and another by the late Mr. Colles, neither of which has been published: in three cases extraction was not attempted, or was unsuccessfully tried, the bullets, forming nuclei of stones, having been found in the bladder after death; in one case the bullet was small enough to be voided by the urethra. The situation of the external wound in the cases cited was very various. The time that elapsed between the infliction of the wound and the removal of the ball varied from a day or two to ten years. The lateral operation was performed in the majority of cases, but the high operation had been employed by Baudens on account of the ball having entered at the bottom of the linea alba, so that by enlarging the recent wound he could reach the cavity of the bladder.—*London Med. Gaz.* April 5, 1850.

40. *On Dressing Wounds and Ulcers with Charcoal.*—In 1846, Dr. Newmann recommended the employment of charcoal as a substitute for charpie, plasters, ointments, &c.; and since that time numerous cases ("thousands" in all, he says) have confirmed him in the conclusion that the great majority of open surfaces are far more rapidly healed by this means than by any other.

One great object of applications of any sort is the exclusion of the atmospheric air, which coming in contact with the pus decomposes it. The capillary action which takes place between the granules of the charcoal prevents a great accumulation of the pus on the surface of the wound, and spreads it widely, so that it dries and fills up the interstices of the powder, and prevents the access of air to the wounded surface. Charpie and lint also exert capillary action, but not to the same extent, as they cannot penetrate so closely among the irregularities and depressions of the wound. Besides this effect, due to its porosity, charcoal exerts a most favourable influence by its power over putrefaction, and hence its great use in gangrenous wounds, and in fact in all open surfaces when changes in the pus are to be feared. In corroboration of this general eulogium, the author selects certain special cases, which usually offer some difficulty in their management.

Thus every one knows what a troublesome affection is produced by an *in-growing nail*, and the painful character of the remedies employed; Dr. Newmann declares he is enabled to heal the obstinate ulcer thus produced in as many days as these various means require months. Having separated the soft parts from the nail, so as to expose the ulcer in its entire depth, he deposits the charcoal freely therein, having combined with it a little acetate of lead, or oxide of zinc, leaving the entire nail covered with this, and binding a piece of lint over it, the patient wearing a wide shoe and keeping quiet. In twenty-four hours the toe is bathed in tepid water, and new charcoal is added to the wound, without disturbing any of that previously applied, which may be firmly adherent. A week or a fortnight of such treatment suffices to heal the wound. *Sore nipples* constitute one of the minor ailments that cause great suffering and trouble in healing. In this case he usually employs lycopodium mixed with a little oxide of zinc (for a fine powder, not charcoal alone, though usually the most preferable one, constitutes the basis of treatment), with which the part is well powdered each time the child has sucked. This penetrates into the fissures of the nipple, and however strongly the child may suck, some of it remains in contact. The wound quickly heals. *Discharges from the ear*, dependent upon ulceration of the meatus, are healed by charcoal in three or four weeks, even if the ulcera-

tions were considerable. The meatus is syringed out every day, and the charcoal then freely introduced. *Fissure of the rectum* is one of the most painful and distressing diseases that come under the cognizance of the surgeon. The charcoal should be applied after every stool, and often in the day besides, care being taken to have it effectually and freely brought into contact with the fissured surface. Dr. Newmann, after expatiating upon the difficulty of treating the suppurating wounds supervening on *extensive burns*, so as to prevent deforming cicatrices, declares that charcoal obviates much of the inconvenience, by keeping the surface of the wound dry, even when the suppuration is abundant; and that contraction does not follow, or it is much less considerable than after any other mode of treatment. If the burn is on the back, the charcoal may be freely strewed over the bed. Since he has employed the same means in *gunshot wounds*, he has met with much less trismus and tetanus, and has been surprised at the rapidity of the cure. In the treatment of *ulcers of the legs*, even without insisting upon the recumbent posture, he has also been very successful. In a few days the surface becomes cleaned, and a good crop of granulations developed, while the callous edges are levelled. To diminish the circumference of the sore more rapidly, strips of adhesive plaster are now applied above and below it, and across its middle, the intervals between the strips being strewed with charcoal, covered with ointment spread on lint, and bandaged. This dressing is renewed every two or three days. In this way ulcers, which have continued open for years, have been healed in six or eight weeks, the patient still taking moderate exercise.

The cheapness of the substance, and the ease with which it may be prepared, under a variety of circumstances when ordinary dressings are not obtainable, should recommend it strongly, Dr. Newmann observes, to hospital and military authorities.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Casper's Wochenschrift*, 1849, Nos. 42 and 43.

41. *On Disjunction of the Lower Epiphysis of the Humerus.* By WM. SMITH, M. D. (*The Dublin Quarterly Journal of Medical Science*, Feb., 1850).—In this interesting paper, the author endeavours to demonstrate that fracture of the humerus immediately *above* the condyles has been generally confounded with disjunction of the inferior epiphysis of the same bone from writers overlooking the fact, "*that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone.*"

"The lower articular surface of the humerus in the young skeleton," Dr. Smith remarks, "differs from that of the adult bone in the following remarkable particular, namely, that the capitulum, or that portion which articulates with the head of the radius, is nearly double the size of the trochlea; so that the inferior surface of the former is nearly upon the same level as that of the latter process; and the humerus, when placed resting by its lower extremity upon a horizontal plane, assumes nearly a vertical position: in short, the radial is fully developed long before the ulnar portion of the epiphysis, and, as will hereafter appear, the knowledge of this fact is not destitute of practical importance in the diagnosis of that embarrassing accident, fracture through the line of junction of the epiphysis with the shaft, or, in other words, fracture of the humerus immediately *below* the condyles."

A description of the signs which characterize this lesion must also be, to a certain extent, an enumeration of those which accompany dislocation of both bones of the forearm backward; many of the symptoms likewise belong to the transverse fracture, immediately *above* the condyles.

The injury usually results from a fall upon the elbow, but I have known it to occur from a fall upon the palm of the hand, the forearm being at the time extended upon the arm. The limb immediately becomes powerless, severe pain is experienced in the elbow, and the following signs present themselves:—The forearm is flexed, and the hand in a middle position between supination and pronation. The olecranon, drawn upwards and backwards by the triceps muscle, mounts above the level of the condyles of the humerus, these three processes forming the points of a triangle, the base of which is below. The antero-posterior diameter of the elbow is greatly increased, and the lower end

of the humerus can be felt projecting in front. The application of a gentle force is usually sufficient to restore the normal appearances of the limb, but when the parts are abandoned to themselves the deformity soon recurs. If, after the removal of the displacement by extension, the forearm be rotated upon the humerus, or if the surgeon, as recommended by Dupuytren, grasps the arm in one hand, and the forearm in the other, and then moves them backwards and forwards upon each other, the crepitus which characterizes fracture can generally be elicited. The motions of flexion and extension are exceedingly limited, and any attempt upon the part of the surgeon to communicate them produces severe pain.

The signs above enumerated are sufficient to demonstrate that the injury in question may readily be confounded with transverse fracture of the humerus above the condyles, or with luxation of the forearm backwards. The former would be a mistake of comparatively slight importance, inasmuch as the same treatment is applicable to both lesions; but the latter must be considered as a grievous error, the results of which are nearly as lamentable as those of leaving a true luxation of the joint unreduced. The observations of Dupuytren respecting the danger of confounding fracture immediately *above* the elbow with dislocation backwards, apply with peculiar force to the injury we are considering.

"If," says this distinguished surgeon, "the opinion that the case is one of luxation be acted upon, extension and counter-extension are employed, the reduction is accomplished without much difficulty, a roller is applied, and the surgeon congratulates himself upon the ease with which he has restored the bones to their places. But soon the displacement is reproduced, and at the end of a few days, in the midst of the swelling, something unnatural is felt. This accident is generally ascribed to the patient, who is charged with being intractable: the reduction is again effected, but the deformity soon recurs, and considerable swelling then supervenes. As long as this condition lasts, the surgeon continues secure; but when the swelling has disappeared, after the lapse of a few weeks, he discovers the error which he has committed, but the mischief cannot now be repaired, the motions of the joint are never perfectly regained, and the deformity is incurable."

As the loss of the normal relation between the olecranon and the condyles renders the separation of the epiphysis peculiarly liable to be confounded with dislocation of the forearm backwards, and as it is obviously a matter of the utmost importance to distinguish carefully between these accidents, let us now consider the signs, by availing ourselves of which we materially diminish the chance of mistaking it either for luxation, or for fracture above the condyles.

In case of fracture traversing the line of the epiphysis, the transverse diameter of the tumour which projects in front is equal to that of the opposite humerus, measured anteriorly from condyle to condyle; in this respect the accident resembles the dislocation of both bones backwards, but differs from fracture *above* the condyles. The outline of this osseous tumour is rounded, presents to the feel none of the irregularities or sharpness of an ordinary fracture, and upon its inferior surface, which is convex, and limited at either extremity by the condyles, neither trochlea nor capitulum can be distinguished.

When the joint is viewed posteriorly, two osseous prominences are seen, and can be distinctly felt; they are both placed above and behind the plane of the condyles, but are themselves situated (if the patient be not more than six or eight years of age) nearly upon the same level, the internal, however, being always a little higher up than the external. At a more advanced age the distance between these two prominences is observed to be greater, in consequence of the increased development of the internal, which is formed by the olecranon, the summit of which process grows by an epiphysis.

At no period of life, however, at which it is possible for the accident in question to happen, is the distance between the two projections nearly as great as it is always found to be between those which, in cases of luxation of both bones of the forearm backwards, constitute so marked a feature of the injury. In the latter accident the distance averages about one inch and a half, while in the former it is seldom more than three-quarters of an inch; the external tu-

mour, in this case, being formed by the *capitulum of the humerus*, still surmounting the head of the radius, for which, in consequence of the concave form of its superior surface, it is extremely liable to be mistaken, if attention be not paid to the diagnostic sign which has just been mentioned.

For the history of the following case I am indebted to my friend, Dr. James S. Hughes, one of the surgeons of Jervis Street Hospital:—

Michael Fleet, æt. 12, was admitted into Jervis Street Hospital on the 24th of August, 1847. He stated that while standing in the fruit market, a boy, running against him with great violence, threw him down, and that having, in the act of falling, stretched out his arm to save himself, the other boy fell with all his weight across the back of the extended limb. On his being raised from the ground, it was found that his arm was powerless, and he was at once brought to the hospital, where he was seen by Dr. Hughes, in twenty minutes after the occurrence of the accident, and consequently before the characteristic features of the injury had become obscured by swelling.

The forearm was semiflexed, and the hand in the position of half supination; the olecranon, which formed a remarkable projection, was placed above and behind the condyles of the humerus. A second osseous tumour, the upper surface of which was concave, and which was supposed at first to be the head of the radius, could be distinguished behind the outer condyle. The lower extremity of the humerus formed a considerable prominence in front.

Judging from these appearances, Dr. Hughes' first impression was that he had to deal with a case of dislocation of both bones of the forearm backwards; but finding that the joint admitted of a much greater amount of flexion than can usually be communicated to it in such cases, he began to suspect the existence of a fracture. Extension was, therefore, made by an assistant, while Dr. Hughes grasping the arm with one hand and the forearm with the other, moved them in opposite directions, and thus succeeded in producing a distinct crepitus. The diagnosis was therefore made, that the injury consisted in a fracture of the humerus through the line of junction of the epiphysis with the shaft, with displacement of the bones of the forearm, *along with the epiphysis*, upwards and backwards.

A moderate degree of extension and counter-extension was sufficient to remove the deformity: the limb was placed in the semiflexed position, and secured by angular splints and a roller. It was, however, found extremely difficult to prevent a recurrence of the deformity, and when the patient left the hospital a slight degree of displacement still existed. Shortly after his dismissal I saw him, in consultation with Dr. Hughes and Dr. Powers, and having made a very accurate examination of the limb, I came to the conclusion that the original injury had consisted in a simple disjunction of the epiphysis; for although the deformity was now not considerable, the principal characteristic features of this lesion, as they have been described in the preceding pages, could still be recognized. The boy had recovered very considerable use of the limb; he was able to extend the forearm perfectly, and could flex it beyond a right angle. The antero-posterior diameter of the joint was greater than that of the opposite side; the tendon of the triceps was in relief; the outline of the tumour which projected in front was rounded; but it was impossible to feel distinctly either the capitulum or the trochlea of the humerus. Two osseous tumours, formed by the olecranon and the capitulum, were seen posteriorly; but although they were still situated somewhat behind the plane, they were not now above the level of the condyles. The callus which had been effused, obscured, in some degree, the features of the injury. About this time the patient was also seen by Mr. Adams, who adopted the same views as to the nature of the accident.

From what has been stated in the preceding pages, it is manifest that (contrary to what the statement of authors would lead us to infer) implicit reliance is not to be placed upon the loss of the normal relation between the olecranon and the condyles of the humerus, as a means of distinguishing between luxation of the forearm backwards, and fracture of the lower extremity of the humerus. It is evident that there is an accident of the elbow, in which the bones of the forearm lose their natural relations to the condyles, and yet that accident is not necessarily a dislocation, but may be a fracture through the

line of the lower epiphysis of the humerus, which line is situated *below* the condyles.

The importance of being familiar with the anatomy of the epiphyses of the long bones need not, therefore, be again alluded to; I may, however, be permitted to remark that it is also a matter of practical advantage to be acquainted with the periods at which the different epiphyses unite with the shafts of the bones to which they belong; for instance, the lower epiphysis of the humerus becomes identified with the shaft long before the superior: the separation of the latter by external violence may, therefore, occur at a period of life when the disjunction of the former would be impossible.

I shall terminate this brief notice of fracture through the line of the lower epiphysis of the humerus, by stating as concisely as possible the points of resemblance and dissimilarity between it and the two injuries with which it is most liable to be confounded, viz., fracture immediately *above* the condyles, and luxation of both bones of the forearm backwards.

The symptoms which belong to it, in common with fracture above the condyles, are the following:—Shortening, crepitus, the removal of the deformity by extension, and its tendency to recur when the extending force is relaxed, the presence of an osseous tumour in front of the joint, the increase in the antero-posterior diameter of the elbow.

It differs from the supra-condyloid fracture in the greater transverse breadth and regular convex outline of the anterior tumour; in the existence of two tumours posteriorly; in the loss of the normal relation of the olecranon to the condyles.

It resembles dislocation of both bones of the forearm backwards, in the following particulars:—

The transverse diameter of the anterior tumour is the same in each case; so also is the antero-posterior breadth of the elbow; and in both the olecranon ascends above the condyles, the limb is shortened, and two osseous prominences can be distinguished posteriorly.

It differs, however, from luxation in the existence of crepitus, the tendency of the deformity to recur, in the anterior tumour being destitute of trochlea and capitulum, and in the circumstance of the two posterior tumours being nearly upon the same level.

42. *Perpendicular fall from a height of 192 feet—Fracture of the thigh and patella, with severe concussion of the thoracic viscera—perfect recovery.*—The following extraordinary case is recorded by Dr. Knox, surgeon to the Strangford Dispensary, in the *Dublin Medical Press*, May 8th, 1850:—

“On the 8th of September, 1834, Alexander Boyd, of the coast guard service, under the command of the late Captain Gilbert, R.N., whilst patrolling on the cliffs which overhang the sea, in the vicinity of Kenbawn-head, near Ballycastle, in the county Antrim, mistook his way, owing to the extreme darkness of the night, and fell over a precipice, rising sheer from the seamount, as I afterwards ascertained by measurement, to the height of 192 feet. In his descent he grazed slightly the face of the cliff at one point only, about 93 feet from the summit, and fell on a slip of grass land lying between the base of the cliff and the sea. Here he lay for some hours, until a little dog, the companion of his walks, gave the alarm by whining at the door of his cottage, and caused a search to be instituted along the coast. The circumstances of his almost miraculous escape attracted so much attention at the time, that the place where this extraordinary accident occurred was visited by great numbers of persons for many week afterwards.

When called to see him on the following day, I found that the femur had been fractured obliquely at the superior portion of the middle third, and the patella of the same side, longitudinally. Slight abrasion of the cuticle of the leg and the outer ankle were observed, and the thigh and knee were greatly swollen. He complained of severe pain at the upper part of the sternum, and in the course of the splenii muscles, as well as of much dyspnoea, aggravated by deep inspiration. The pulse was 100, and the respirations 24 in the minute,

the skin hot, the tongue white, and the bowels costive. His mind was apprehensive but unclouded, and no injury of the head was apparent.

As the injured limb was both very painful and much swollen, I at once determined not to attempt immediate reduction of the fractures, but to trust to secondary coaptation or setting, after the inflammatory symptoms should have subsided, and contenting myself, in the meantime, with placing the limb in the position most easy for the patient, and supporting it by cushions properly adapted to prevent motion of the broken extremities of the femur. A cold spirituous lotion was directed to be applied with great regularity; the most perfect quiet and very low regimen were enjoined; a full dose of castor oil was administered; and on account of the injury of the chest, which obviously presented the chief source of danger, thirty ounces of blood were detracted from the arm.

Sept. 10th. The symptoms were little changed. An additional purgative was necessary, and calomel and antimony were prescribed, in small doses, three times a-day.

11th. The medicines have acted powerfully; the pain of the chest and difficulty of breathing are much abated; the swelling of the limb remains undiminished, but he complains of no pain in it except on motion; pulse 80; respiration 16.

12th. Gripping and tenesmus having occurred, the mercury was suspended, and a draught, containing castor-oil and laudanum, relieved the abdominal irritation. On the 15th the pectoral symptoms were completely removed, and the swelling and inflammation consequent on the fractures sufficiently abated to admit of the application of a laced cap to the knee, and of the necessary bandages and splints to the thigh. The limb, when the fracture was reduced, was apparently of the same length as the other. Regular action of the bowels was promoted by the occasional use of aperients, and the patient was allowed a more generous regimen.

On the 22d, the apparatus having become somewhat disarranged, was cautiously removed, and the limb being found in its proper position, it was again carefully and firmly adjusted. The pulse 70, the bowels regular, and the appetite good. Animal food was now allowed.

On the 26th, considerable pain in the course of the thigh being complained of, the bandages were slackened a little, and an aperient administered. On the 5th of October, and again on the 13th, the splints were slightly re-adjusted, and the bandages tightened. On the following day, sharp pain at the site of the femoral fracture annoyed the patient considerably, but he received instant relief by the division of one or two turns of the bandage. On the 29th of October the entire apparatus was removed, when both fractures were found to be consolidated; the limb apparently unshortened, but with imperfect power of motion, the muscles appearing paralyzed by long pressure and want of use. The knee also was somewhat stiff, and painful on flexion being used. The repeated application of a stimulant embrocation was therefore directed, and careful passive motion of the affected joint, the entire limb being swathed in new flannel.

Nov. 2d. The patient was permitted to leave his bed, his health being excellent, and the power of using the injured limb gradually increasing. By the middle of the month he could move about with the aid of crutches; and on the 8th of December, exactly two months after the accident, the only symptom which remained was a degree of stiffness of the knee-joint, preventing the full use of the limb. This gradually abated, and in a short time he was enabled to rejoin the coast guard service, and to patrol as usual for several years afterwards. I have lost sight of him lately, but I believe he is still in the service.

The chief points of interest in the above case are *the successful result of secondary setting of the fracture, and the very extraordinary escape of the patient from immediate death*, as I have never heard of a similar case, nor should I have believed in the possibility of a fall, from a height of 200 feet, occurring without certainly fatal results. Once, indeed, in the harbor of Malta, I was an eye-witness of the fall of a seaman from the truck of a line of battle-ship, perhaps 176 feet; but in that case, the man fell in the water, having only glanced against the chains in his descent, by which, however, the os femoris was frac-

tured in two places. He was, I believe, uninjured in other respects, as he swam until picked up, and rejoined his ship in a few weeks, after cure of his fractures in the Malta Naval Hospital.

The other point, which is of more practical importance, was the treatment of the fracture of the thigh by delaying the application of the permanent apparatus until the inflammatory symptoms had in a great measure subsided, applying only, in the first instance, such support, by means of position, folded sheets and cushions tied round the limb with sufficient firmness to prevent injury of the soft parts by displacement of the injured extremities of the bone. This mode of treating fractures I learned from Sir. S. L. Hammick, now of London, when I was serving as assistant-surgeon in the Royal Naval Hospital at Stonehouse, Plymouth, and observation of what I had an opportunity of seeing in his practice, and subsequently in my own, justifies me in forming a most favourable opinion of the plan advocated by that very distinguished surgeon in his truly 'Practical Remarks,' where the reader may find the comparative merits of primary and secondary fractures ably discussed. The frequent occurrence of shortening in oblique fractures of the femur, even when most carefully treated, is known to all surgeons, and it has even been stated on high authority that this is inevitable; but a result so unfavourable has not occurred in the experience of the eminent surgeon alluded to, and the cases treated by him, under my observation, by secondary setting were perfectly successful. This very day, by a singular coincidence, I have had an opportunity of examining accurately a fracture treated by him, in the person of a pensioner of marines, which occurred about forty years ago.

The cure was most perfect, not the slightest difference being perceptible either in the dimensions or (as I am assured by the patient), in the sensations, or motive power of the affected side.

When entering here into a discussion of the comparative merits of primary and a secondary setting of fractured bones, I shall content myself with stating that I have found the latter mode of treatment perfectly successful in several cases. But if only equally successful in the results with the plan of immediate reduction almost universally recommended, there appear to be several reasons which entitle it to a preference, of which the risk of severe and dangerous inflammation is one of the principal, and the consequent necessity for removing the apparatus perhaps more than once. No doubt cases occur in which the immediate application of splints is indispensable, as on board ship in rough weather, or where the patient is furious from delirium or intoxication; but under favourable circumstances, I believe any surgeon, who shall judiciously try the mode of treatment here advocated, and which is very minutely described in the work alluded to, will find that it shall not disappoint his expectations. It may be said, however, as the swelling and inflammation were too far advanced, before the patient was seen, to admit of primary co-aptation of the fracture, that the case detailed is scarcely in point. The following instance, however, is: A strong muscular labourer was struck by the end of an enormous log of wood, which fractured the middle third of the *os femoris* obliquely. As the man was so circumstanced that I could have him closely under observation, I contented myself with flexing the thigh on the great trochanter, and flexing the leg to such an extent as rendered the position most easy to the feelings of the patient, and with taking such general measures as the nature of the case required, for preventing displacement of the bone, and moderating the inflammation. When this was abated about the tenth day, I placed the patient on his back, reduced the fracture accurately, and applied very firmly the necessary bandages and two splints along the inner and outer aspect of the thigh, sufficiently long to secure the heads of the bone. A third splint, but shorter, so as not to press on the patella, was placed in front. The whole apparatus was firmly secured by strong tapes, and beyond occasionally tightening, or slightly readjusting it, nothing further was requisite.

The bone was perfectly consolidated by the ninth week, the callus having been thrown out rapidly and abundantly. In ten weeks the patient was permitted to move about with crutches, and he very rapidly regained the full power of the limb. There was no apparent shortening, nor the slightest halt

perceptible. Now, I would not assert that an equally perfect consolidation might not have been effected in the ordinary mode of immediate setting, but a better one certainly could not, and if only attended with an equal degree of success as to the final result, the mode in question appears to have, as I have already stated, some important advantages. Where it shall be adopted, it appears to me that the starch bandaging of Seutin may be employed with much greater safety than when used immediately after the receipt of the injury."

43. *Ligature of the Subclavian Artery for Aneurism.* By JAMES SYME, Esq.—Mr. H., a mercantile gentleman, about fifty years of age, in the course of last summer, while travelling by railway, was thrown with great force to the opposite side of the carriage, in consequence of the train being suddenly stopped, and struck the forepart of his right shoulder on one of the partitions between the seats. He did not sustain much inconvenience from this injury at the time, but before long began to suffer from pain in the neighbourhood of the injured part, which, being ascribed to rheumatism, was treated by leeching, fomentations, and friction. Having experienced no relief from the use of these means, he applied to Dr. Begbie, who examined the shoulder, and finding a pulsating tumour below the clavicle, proposed that I should see the case.

The tumour occupied the hollow on the inner side of the shoulder, and lay under the pectoral muscle, close up to the clavicle, but did not ascend above the bone. It ceased to pulsate when the subclavian artery was compressed, which could not be effected without considerable care and much force, from the neck being remarkably thick. The patient possessed a robust frame, with an apparently very energetic temperament; but so far as we could ascertain, did not labour under any other disease than that for which our assistance was required. He stated that there was nearly constant uneasiness proceeding from it, and occasionally paroxysms of agony greater than he could endure. In these circumstances we felt no hesitation in recommending that the artery should be tied without any delay, except what might be requisite for moderating the force and frequency of circulation. With this view, he was confined to the house for a few days in bed, on a restricted diet, and under the action of moderate laxatives.

On the 23d of October, in the presence of Dr. Begbie, and with the assistance of Dr. Richard Mackenzie, I performed the operation. The patient lay on a table, with his head towards the window—an arrangement which, after trying different methods, I consider by far the most convenient; and the incisions were made as usual, one extending along the clavicle, while another proceeded nearly from its centre at a right angle, in an upward direction, parallel with the external edge of the sterno-mastoid muscle. The external jugular vein, which lay much in the way, being retained in its position by a large cross branch, was cut across, and tied at both orifices. A pretty large mass of fat and lymphatic glands, occupying the triangular space under the platysma myoides, was dissected out, so as to facilitate access to the artery, which was then readily exposed, and tied by a single silk thread.

Next morning Dr. Begbie and I were urgently summoned to see the patient, who had been extremely restless during the night, insisting upon getting out of bed, and exciting great alarm, by cold sweats, fainting, and other unpleasant symptoms. We found him much more comfortable than he had been; and, on the whole, in a satisfactory state, with the exception of a very frequent pulse, which was about 120. After this everything went on favourably, the pulse gradually subsiding in the course of ten days or a fortnight to the natural standard. The wound healed kindly, and the ligature separated on the twenty-third day, but recovery was then delayed by a slight attack of erysipelas. The patient is now, and has been for some time past, perfectly well, without any perceptible trace of the aneurism.

The points of interest in this case seem to be—1. The mode of production by a blow, which could act only by bruising, and not by extending the coats of the vessel; 2. The division of the jugular vein without any bad consequence, which tends to recommend this as the proper course when the vessel does not admit of being readily held aside, as happened, and led to the same procedure,

on the only occasion that Mr. Liston tied the subclavian artery with success; and 3. The alarming symptoms which occurred during the night after the operation, and would certainly have been attributed to the influence of chloroform, if any had been administered to the patient.

I have now operated upon five cases of axillary aneurism, three by ligature of the subclavian, and two by amputation at the shoulder-joint. Four of the patients are alive and well; in the fifth the artery was very much diseased, as might have been suspected from the fact that I had formerly operated upon the patient for popliteal aneurism, and as was positively ascertained after death, at the end of a fortnight from the operation, in consequence of hemorrhage. In a sixth case, I commenced the operation, but desisted from proceeding with it as the tumour was found to ascend too high for the safe application of a ligature. Electro-puncture was afterwards tried without any good effect.

With regard to the general question respecting the treatment of aneurism, it may be added that I have tied the femoral artery *eighteen* times without any bad effect from the operation. In sixteen of these cases there was either a popliteal or femoral aneurism. Fifteen were cured, and the sixteenth, after appearing to be so, ultimately proved fatal through suppuration of the tumour. I have also operated in eleven cases of brachial aneurism, with complete success in all of them. The strenuous efforts of some surgeons in Dublin to revive pressure as a substitute for ligature has led to trials of this plan in Edinburgh. But I am not aware of its having proved successful, even in a single instance. —*Monthly Journal of Medical Science*, March, 1850.

44. *Paracentesis Thoracis*.—Dr. GEORGE F. EASTON read before the Liverpool Medical and Pathological Society, Feb. 21, 1850, the following interesting case, in which paracentesis thoracis was performed:—

James Callum, aged 26, of temperate habits. His father, and a brother and sister, have all died of affections of the chest, probably phthisis, though this cannot be accurately ascertained. His mother is still alive, at the age of 80, and he has two brothers and a sister.

He had good health till the month of May last, when he had a smart attack of fever, accompanied with bronchitis, which lasted about a fortnight. He resumed his occupation too soon afterwards, in an open shop; but, as his cough did not get much, if at all worse, the inconvenience it occasioned was too trifling to induce him to desist from work. By and by, his breathing became affected; but the difficulty of respiration was so gradual in its progress, and the symptoms of pleuritic disease so insidious, that its true cause, for a long time, escaped detection. About the beginning of September it was discovered to result from an accumulation of fluid on the right side of the chest. About the middle of the month it had risen as high as the nipple; and, notwithstanding the use of medicine, its progress was unrestrained, till, at the commencement of October, it had reached the clavicle. He was kept for some time under the influence of mercury. Blistering and other remedies were employed; but, after remaining in a hospital nearly three weeks, he left without experiencing any benefit.

As no prospect remained of the fluid being removed by absorption; as the prolonged use of medicine, which had no apparent control over the disease, was more calculated to do harm than good, by still further deranging his general health; as the dyspnoea was great, and no success could be expected from an operation performed at a much later period, on account of his obviously declining strength, it was resolved to undertake it without delay. To the ordinary symptoms of fluid in the pleura there was superadded another, indicative of the complication of the disease with pneumothorax; an audible fluctuation produced when the patient was shaken, by the splashing of the fluid against the walls of the chest.

A consideration of the uniformly fatal issue of those cases in which this unfavourable symptom owes its origin, as it usually does, to the bursting of a tuberculous abscess into the pleura, led me to propose the operation rather as a means of relief than as affording any very encouraging prospect of ultimate recovery. Profuse nocturnal sweats, from which he suffered, made me some-

what suspicious that this might be the source of the contained air; but, as I had failed to detect the presence of tubercles in either lung, I felt greatly disposed to view it in a more favourable light, as the effect of secretion.

There were two or three other reasons which assisted me in thus regarding it:—

1st. Its very trifling amount, as ascertained by percussion, any resonance which existed being confined to a small spot that could be covered with two fingers, and which varied with the patient's position.

2d. The absence of hæmoptysis and purulent expectoration.

3d. The entire absence of appreciable pain during the course of the disease.

I think we might reasonably expect, if a vomica had discharged its contents into the pleura, that its rupture would have occasioned an amount of pain sufficiently severe to mark the commencement of the inflammation which gave rise to the subsequent effusion; but no such pain was ever complained of, and the patient repeatedly told me that he had never experienced any, even of the slightest description.

The patient, at the time of the operation, had bronchitis in the left lung.

On Saturday, November 3d, in the presence of Dr. Turnbull and Mr. Higginson, who kindly assisted me, a trocar was introduced into the right side of the chest above the eighth rib, and rather more than half a pint of pus removed. In attempting to adapt an apparatus to prevent the admission of air, the canula was partially withdrawn; and, as it could not be readily reintroduced, we were satisfied for the present with the information which was thus derived and the relief which was thus afforded. No bad symptom followed. A blister was applied to the affected side, and some cod-liver oil, with a bitter infusion containing iodide of potassium, was ordered to be taken daily, preceded on the first occasion by a purgative.

At the end of a week, the dimensions of the chest having undergone no change since the operation, and the other physical signs of the disease remaining as before, the operation was repeated, and eight pints of the same inodorous purulent fluid were slowly withdrawn. This was accomplished without producing any material effect on the patient, except a disagreeable feeling which arose about the middle of the operation, and increased towards its termination, resulting from the removal of pressure to which the displaced viscera had become accustomed, and from the necessity occasioned by the collapsed condition of the right lung for their rather sudden movement in an opposite direction, to supply the vacant space caused by the abstraction of so much fluid. This lasted during the four succeeding days, and was accompanied by inability to lie on the affected side, on which he had formerly reposed with greater comfort, and by his experience as if any considerable pressure would have been attended with danger to the integrity of the ribs.

The entrance of air into the chest was effectually prevented by the use of an apparatus suggested by Mr. Higginson,* which, on account of its simple construction, its easy management, and its complete efficacy in this instance, I can recommend for employment on similar occasions, in preference to others of a more costly and complicated nature. It is simply a tube about a yard long, made of vulcanized india rubber, which being filled with water, and one of its extremities placed over the mouth of the canula, acts on the principle of a syphon. If it is properly adjusted, and the other extremity immersed in the fluid, air cannot by any possibility gain admission into the chest. The stream was free, uniform, and continuous, unaffected by the respiratory movement. To the middle of the tube was adapted an india rubber bottle, which in this operation does not appear to be essential to success, when the fluid is moderately thin. When emptied by pressure, and then allowed to expand, it may be advantageously employed to clear the tube, if the passage happens to be obstructed by lymph or coagulum, or other small bodies of a soft and yielding nature, or to wash out the chest with water, or any of the lotions which have been recommended for the purpose. And these seem to be the chief, if not the only advantageous uses to which it can be applied.

* Mr. Higginson's apparatus is described in the *Lancet*, Feb. 27, 1847, p. 240, as a simple form of stomach-pump, without valves or stopcocks.

It is generally stated by writers that when the operation of paracentesis is performed at a stage of the disease when the lung is incapable of expanding, that the operator has a choice of but two alternatives. He must either be content with the amount of fluid he is able to withdraw from the chest before the stream becomes interrupted (which is often only a small proportion of what is left behind), or he must obtain a further supply at the expense of replacing it by atmospheric air, with the generally experienced consequences of renewed inflammation, increased and more offensive secretion, irritative fever, and too often rapid and irremediable prostration. Neither alternative is desirable: the former on account of the necessity imposed for a frequent repetition of the operation, the latter on account of the reasons already assigned. By the use of this simple apparatus both are avoided: the fluid may be almost entirely, if not wholly withdrawn; the sound lung is placed in the most favourable position for increased dilatation, and the condensed one gradually to regain its dimensions and recover its functions.

When the tube is filled, and its extremities placed in the positions I have indicated, its cavity is continuous with that of the chest, of which it may be made to form the most dependent part. The void uninterruptedly formed by the escape of the fluid at the lowest part of the tube is communicated upwards to the chest, where it will gradually increase, till the last remaining portion of the fluid has found its way by gravitation into the tube.

The patient sat during the greater portion of time that was occupied in the withdrawal of the fluid, and towards the close was lowered into the recumbent posture to favour its escape by placing the opening in a more dependent position.

The trocar used on this occasion was of the size generally employed in the operation for hydrocele. A gentle flow in this case was especially called for to prevent laceration of important structures within the chest, in consequence of there being no substitution (as in ordinary cases) of atmospheric pressure for that of the fluid withdrawn. For this reason, too, the patient was directed to breathe with ease, and warned to make no sudden or vigorous effort, which might at all subject him to the danger we have specified—a danger great in proportion to the amount of effusion.

The circumference of the chest, before the operation, was three feet one inch and a half; the measurement of the right side exceeding that of the left immediately below the nipple by an inch and three-quarters, and at its most prominent part by two inches. The operation had the effect of reducing the entire circumference two inches and a half—*i. e.*, to two feet eleven inches, the right side still preserving an increase over the left of about half an inch, which was probably to be ascribed to its naturally larger capacity. By examining the respective measurements of the two sides before and after the operation, which stand thus—

Right side, $19\frac{3}{4}$ inches	}	Before the operation,
Left do. $17\frac{3}{4}$ "		
Right side, $17\frac{3}{4}$ inches	}	After the operation,
Left do. $17\frac{1}{4}$ "		

it will be seen that the affected side measured two inches, and the sound side half an inch less after the operation than before it. This diminution of size on the sound side can be accounted for only in two ways. We must either suppose that the accumulation of fluid on the right side had by its pressure been causing distension, and permanent elevation of the ribs on the opposite side, or we must explain it by saying that the walls of the chest on the left side were to that extent depressed after the operation, in following the organs they contained in their endeavours to supply the vacancy caused on the right. The former opinion I think is scarcely tenable, and therefore I take the latter to be the true explanation.

The patient had no unfavourable or uneasy symptom with the exception of that formerly mentioned, which subsided on the fourth day. On the 11th of the month (the day after the operation) he resumed the use of his medicine as formerly prescribed. On the 13th, his tongue being furred from partaking too

freely of animal food on the previous evening, he was ordered a purgative and five grains of a combination of blue pill and hyoscyamus each evening at bedtime. He was further directed to discontinue the use of the bitter infusion, for which, on the 14th, sulphuric acid was substituted as a tonic.

At the end of a week he moved about through the house, and walked up and down stairs with ease. He slept on either side comfortably and soundly, and breathed with increasing freedom. In addition to a nourishing diet, which he partook of with a relish, he was then allowed a pint of porter daily. His cough had greatly diminished; and though the sound emitted on percussing the affected side could scarcely be said to have improved, with the exception of over the sternum and a trifle beyond it (which was then naturally clear), yet the ribs were slightly raised, and respiration of a bronchial character was heard over a large extent of surface both before and behind.

Thus he continued to improve in health, strength, and appearance, till the middle of the fifth week after the last operation, when a marked change was observed in his appearance. The weather at this time was very unfavourable, so that he had seldom been able to go outside the door. He had, moreover, been unable to procure employment in the house, so that his days had been spent in a state of inactivity, for which we then thought his diet had probably proved too stimulating.

But, whatever cause may be assigned for the relapse, it was evident that the matter was again forming. His tongue was deeply furred, his appetite had left him, he had frequent attacks of pyrosis, and there was tenderness on pressure over the intercostal spaces on the affected side. Recourse was had to purgatives and several counter-irritant applications—such as blisters, nitro-muriatic acid lotion, and concentrated tincture of iodine. Calomel and opium were given to affect the gums; but all without avail. The disease made steady progress; the vomitings occurred in the mornings, the tongue remained foul, sleep deserted him, the appetite did not return, the cough was greatly aggravated, the dimensions of the affected side gradually increased, and the patient became more and more emaciated.

Nor is it likely that these alarming symptoms would ever have received a check had not the operation been timely repeated. On the 22d December, six and a half pints of purulent fluid were withdrawn in the same way as formerly mentioned. It differed from that previously removed in being of a reddish-brown colour, and quite inodorous. When this quantity had been removed, the patient complained that the canula was causing pain. Attempts were made to place it in an easier position; but, instead of relieving the pain, they had the effect of so much increasing it that, neglecting the means of obtaining a further supply of matter we had formerly employed with advantage (*viz.*, that of laying the patient down to make the opening more dependent), the canula was withdrawn. By this omission a little fluid was left behind; and, by a little want of care either in adjusting or withdrawing the tube, a small quantity of air must have entered the chest, so as to render again audible the sound of splashing, which had not been heard since the performance of the first operation. That the quantity was small was evident, as well from percussion as from the patient's experience of the same feeling I formerly mentioned after this as the previous operation, though not to the same extent, or of so long continuance.

The two sides of the chest afterwards measured alike.

A favourable change in every respect immediately followed the operation. His sleep and appetite returned the same day, and the vomiting at once ceased. In two days the tongue was perfectly clean, and the cough greatly relieved.

The improvement, however, was of short duration. At the end of a fortnight the vomiting and other unfavourable symptoms returned. The vomiting was so severe as to return nearly every hour, as much as a quart of acid water being sometimes ejected at a time, and was particularly troublesome at night.

On this occasion I could assign no outward cause for the relapse, as the patient had avoided all stimulants, had never left his room, and had been almost entirely confined to bed. This circumstance, coupled with an observation that the constitutional disturbance was quickly followed by an enlargement of the

affected side, led me to this conclusion—that the operation in a case so far advanced as the present one, whatever other benefit it may confer, has no effect in checking the further progress of the disease, and that the formation of pus proceeds without materially affecting the constitution until it does so after a considerable accumulation, by causing injurious pressure on the nerves and neighbouring organs.

If this be the case, then the disease is quite of a local character, not likely to yield to constitutional remedies, and may co-exist and advance for a certain time (as, I think, on both these occasions it has done) with constitutional improvement. The shorter duration of the improvement on the latter than on the former occasion is probably attributable to the more rapid accumulation of the matter, partly in consequence of its less complete removal, and partly owing to the admission of air, which, by altering the character of the secretion, may have proved an additional source of irritation.

If this view of the case be the correct one, then it is obvious that a cure could not be obtained by the plan hitherto pursued, and could only be hoped for by keeping the secreting sack always nearly empty, with a view to its gradual contraction and ultimate obliteration.

Accordingly, the plan I formed was to remove the whole of the matter, wash out the right side of the chest with warm water, substitute a little clean water for a portion of the matter (as likely to prove less irritating), to keep off the feeling of constriction, and then leaving the plugged canula in the chest to draw off a certain portion of it and the secreted fluid at short intervals; supporting the patient in the meantime by a nutritive diet.

This was put into execution on Tuesday, the 22d of January. That the process of washing might proceed with facility and expedition, it was thought advisable to use something larger than the small canula hitherto employed, and of a material less liable to be acted upon by the secreted fluid. For this purpose a gutta-percha tube was formed, and for its admission an incision was made into the chest with a bistoury. It was easily introduced, and we were fortunate in having made it of sufficient size. At first the matter did not flow, and we were beginning to think there must be some mistake, when out it poured of a sudden, nearly as thick as treacle, of a sickly offensive odour, and of a somewhat darker colour than formerly. With the assistance of the syphon, about three pints streamed forth. The stream becoming interrupted, some warm water was thrown in to dilute it. It again flowed freely, and we calculated that about two pints more of matter were thus removed, independent of the water with which it was mixed. Two or three injections of warm water were used, and it was our intention to have continued them until the water returned nearly colourless. After injecting the fourth quantity, only a small portion of it could be got back, in consequence of the large flakes of lymph, which we suppose the water had stirred up from the bottom of the chest. The tube was plugged and secured in the opening. He complained that it gave him pain; but as it was not severe it was left in its place.

On the following day, however, we learnt that the pain in the wound had become so severe that it had been the cause of his passing a sleepless night. The tube was easily withdrawn, and a smaller one of a different shape substituted without pain in its place. By the aid of the syphon, between two and three pints of fluid then came away, consisting of matter mixed with the water left behind on the previous day. Some warm water was then injected, but the same difficulty presented itself we had formerly experienced. We could not get the whole of it back. Accordingly the canula was plugged, but the patient shortly afterwards complained that it was causing pain, which soon became excessive. After vain attempts to give him relief by partially withdrawing it, the pain became so intolerable that he earnestly entreated me to remove the tube. This I was very unwilling to do, but coldness spreading over the body, and a shivering coming on, I was afraid of his falling into a faint, from which it might be difficult to recover him, and I complied with his request. Air immediately rushed into the chest, and he experienced instant relief. The cause of the pain appears to have been, not the tube but the unequal pressure pro-

duced by the exhausting apparatus. A poultice was applied to the wound. He soon afterwards fell asleep, and on awaking partook of a hearty dinner.

On the morning of the 24th, we found that tenderness at the seat of the wound during the night had prevented him from enjoying a full amount of rest; nevertheless, he appeared better. His pulse was 104; his appetite good, and his tongue much cleaner. Some opiate pills were ordered to procure sleep. The tube was reintroduced, but on withdrawing the plug a little fetid air only escaped. It has since remained in the chest, and for about a fortnight a pint of pus was daily discharged; at first partly through the tube and partly by its side, latterly through the tube alone. From that time to the present the discharge has lessened to about one-half. For a few days after the air was admitted freely into the chest, the discharge was extremely offensive; but since the air has been again in a great measure excluded, it has lost much of its disagreeable odour.

On the 25th, the third day after the operation, the tongue was perfectly clean. As illustrative of the effect of the operation on his digestive organs, I may mention, that on that day he ate for breakfast two eggs and three slices of bread. At noon he had another slice of bread and a glass of wine. At four, nearly a pound of mutton, with a proportionate amount of bread and potatoes, and a pint of water; and in the evening more bread with his tea. His appetite has continued equally good up to the present time.

After a fortnight the porter began to act on his bowels, and the diarrhoea, which lasted three or four days before I was informed of it, greatly retarded his progress. His pulse is now a little below 100, his breathing 25, and his strength, which was very much impaired at the time of the last operation, has somewhat increased, notwithstanding the exhausting effect of the discharge and the diarrhoea combined. He usually sits up for three or four hours every day. Nevertheless it must not be concealed that he is very much emaciated, and that any unlooked-for addition to the debilitating agents already at work would place his life in immediate jeopardy. I have good expectation, however, that his strength will increase more rapidly in proportion as the discharge becomes diminished, and that the constitutional improvement will prove more permanent than before, in consequence of the different organs being exempt from that injurious pressure, which I am satisfied was the cause of relapse on the two last occasions.

If it proceed, we may hope that while the walls of the right side of the chest collapse over the diminished volume of their contents, that the lung will at the same time at least partially unfold itself, the air gradually penetrate its substance, and absorption go forward in any bands of lymph which may oppose its expansion. It is probably too much to expect that this will take place to any great extent, or that the lung will ever with much efficacy perform its important functions. Nevertheless, what nature is unable to effect on the one side, she will compensate for on the other, and an irreparable injury done to the right lung may be counterbalanced by a fuller development of the left. Thus, after a while, the system at large may not be much a loser.

This, however, will require time, and ere it be accomplished the patient's strength may be found inadequate to the long-continued demand upon it, or some new disease may arise, or some incipient one be matured, to interrupt the work, and thwart this desirable end. I am far, however, from regarding the success of the operation as at all dependent on the patient's future progress. We have some reason to expect an ultimately favourable termination (and such a termination, doubtless, would greatly enhance the value of the means mainly instrumental in bringing it about); but should it be otherwise, the great advantage already derived will amply repay us for our trouble, be more than an equivalent to the patient for the trifling suffering by which the benefit was secured, and fully establish the propriety of the operation.

The case appears to me to be chiefly interesting—

1st. On account of the large amount of effusion. The quantity discharged at one time was a gallon, and the whole hitherto cannot be much under five.

2d. On account of its complication with pneumothorax, of doubtful connection with phthisis.

3d. On account of the exceeding mildness of all the symptoms which accompanied the early formation of the matter, constituting what has been termed the latent form of the disease.

4th. As showing the local character of the disease, and the entire dependence of severe constitutional disturbance on the pressure of the fluid, and consequently the inutility of attempting by mere medicinal agents either to cure the one or to allay the other.

Lastly. As exemplifying the facility with which, and the extent to which the removal of the fluid may be effected without the admission of air (a matter of much importance in more recent cases where the lung is capable of expanding), and the great and immediate, and possibly permanent benefit which sometimes follows an operation when performed under circumstances apparently very unfavourable.

Dr. TURNBULL read a long list of cases of paracentesis thoracis, of which nearly two-thirds recovered and lived for years.

Dr. MACNAUGHT mentioned the case of a man, aged 35 years, who wore a canula constantly, and daily discharged a large quantity of highly offensive matter. About every tenth day he had severe dyspnoea, which was relieved by injecting warm water. He had known the patient for at least four years; and for anything that he knew he may be alive still, though it is many years since he saw him. He rode daily on horseback, and begot several children after being tapped.

Mr. HIGGINSON advocated the early removal of the fluid, if it could be ascertained to be purulent. In a case of serous empyema the patient had been tapped and died.

Dr. NEVINS had seen two cases of serous empyema tapped in London with temporary, and only temporary benefit. He had tapped a patient lately two or three times, withdrawing about two pints of serum, the first time with manifest relief of the urgent symptoms, but the latterappings produced less benefit, and the patient died at last. In a case reported to him by Mr. Hensley, of Bath, the patient entirely recovered.

Dr. IMLACH saw a case in which a large quantity of pus was evacuated, but on a second operation only frothy blood. After some weeks the man coughed up a large quantity of blood, and recovered.

Dr. NOTTINGHAM denied the danger of admitting air, and said abscesses often heal best after being freely opened—therefore open the chest freely.—*London Med. Gazette*, April 5, 1850.

45. *Successful Amputation at Hip-Joint.* By R. B. WIGSTROM, Esq., Lahore.—The patient, aged eighteen years, was admitted into the Civil Hospital, at Lahore, on the 1st of November, 1849. The disease requiring the operation commenced, eight years previously, in the ankle-joint of the right leg. Caries of the bones of the leg, and abscesses, gradually went on, until the knee became involved, and finally the femur.

When Mr. Wigstrom saw him the limb was greatly emaciated, and fistulous openings, pouring out pus to within a short distance of the hip-joint. The young man seemed suffering much from hectic, but there was no cough or any symptoms showing lung-disease. In consultation with Dr. Stewart, surgeon to the 14th Dragoons, and Dr. Hathaway, civil surgeon, it was considered necessary to remove the limb at the hip-joint, which Mr. Wigstrom did, on the 7th of November. The operation, which was performed under the influence of chloroform, was finished in half a minute; the flaps met beautifully together. The patient has had a good recovery, and is now going about on crutches.

The method used was Liston's—i. e., the anterior and posterior flaps operation. Not more than two ounces of blood were lost.—*Lancet*, April 6, 1850.

46. *On Lithotomy and Lithotrity: Being an Account of the Experience of MM. Pamard, Sen. and Jun., from 1792 to 1849.*—The following is the substance of a paper (*Revue Médico-Chirurgicale*, May, 1849), by M. PAMARD, Surgeon to the Hospitals of Avignon, in which he describes all the cases of lithotomy and

lithotritry which had come under himself and his father. Documents of this description are as valuable as they are rare.

I am one of those who attach great value to authentic and well-compiled medical and surgical statistics. In furnishing such contributions to science, country practitioners possess an advantage. Their practice is daily open to the observation of their brethren, who live, like themselves, in the midst of the patients, and exercise such a check as to render it very difficult for errors, either voluntary or involuntary, to occur. I proceed to give the operations of my father; giving first the cases upon whom lithotomy was performed more than once, and then those who died within two months after the operation. The other cases are arranged according to their date. From the 5th May, 1792, to the 19th May, 1818, my father performed lithotomy in sixty cases, of which he lost five; but the sixty operations only represent fifty-five patients, because one was cut thrice, and two were cut twice.

Case 1. V. Duclos, of Pont-Saint-Esprit (Gard), aged 68, was cut in the year vii. (A. D. 1798), by an operator of Grenoble. On the 30 Fruct., year viii. (1798), my father operated for the first time. A stone again formed, and was removed on the 5 Vend. of the year x. (1800), and a third stone was removed on the 1st Vend. of the year xii. (1802). The patient survived a long time after the third operation, without another stone forming.

Case 2. A. J. Jouve, aged 48, of Gordes (Vaucluse), was cut for stone, on the 13 Floréal, year vi. (1796). A fistula formed, which probably was the cause of the production of a new calculus, for which a second successful operation was performed on the 15 Frimaire, year vii. (1797).

Case 3. J. Ricard, of Cavillon (Vaucluse), aged 15, was cut the first time on the 8 Frimaire, year viii. (1798); and the second operation, which was successful, was not performed till the 27th September, 1811.

Case 4. J. Lombard, of Avignon, was cut for stone on the 23 Brumaire, year vii. (1797), having had the same operation performed, when 4 years old, by my grandfather. The stone never formed after the second operation.

Case 5. J. Veyren, aged 19, of Villeneuve (Gard), had lithotomy performed on the 4 Floréal, year viii. (1798). My father conjectured that the first operator had left fragments of the calculus in the bladder. The operation was repeated on the 3 Frimaire, year ix. (1799), and the patient recovered.

Case 6. T. Morgan, of Caumont (Vaucluse), a female, aged 8 years, had suffered from her birth. Lithotomy was performed on the 30 Vendémiaire, year iii. (1793). The operation was difficult, and the bladder was torn at its fundus. The stone was very large, considering the age of the patient, weighing 105 grammes (about 27 drachms apoth. weight). The child died on the fifth day after the operation.

Case 7. N., a man, aged 72, of Avignon, was cut on the 20th August, 1792. He had suffered for 20 years, and was only driven by pain to submit to the operation. The pubic artery was probably involved; the stone was very large and jagged. After a succession of hemorrhagic attacks, the patient died on the 26th September.

Case 8. J. O., a boy, aged 10, of Crillon (Vaucluse), was cut for stone on the 8 Floréal, year vi. (1796). Owing to the size of the stone, the operation was long and painful. It broke under the pressure of the forceps, which necessitated their repeated introduction. Death, from inflammation of the bladder, ensued three days after the operation.

Case 9. F. C., a lad, aged 19, of Malaucène (Vaucluse), was cut on the 23 Brumaire, year vii. (1797). The operation was easily and rapidly performed; but the patient died from phlebitis on the eighth day.

Case 10. M. V., a man, aged 25, was cut on the 16 Floréal, year viii.; and though there was no complication in the operation, it was followed by death from phlebitis on the 27th of the same month.

Case 11. P., a boy, had a small stone removed by lithotomy, on the 5th May, 1792. Rapid recovery.

Case 12. V., male, aged 17, cut 19th April, 1797. Rapid recovery.

Case 13. M., aged 47, a man, was cut 18th May, 1793. Rapid recovery.

Case 14. Fabre, aged 8 years, cut 9th May, 1793. Recovery.

- Case 15. F., a boy, aged 4 years, cut 27th September, 1793. Rapid recovery.
- Case 16. R., a boy, aged 7 years, cut 21st September, 1793. Recovery.
- Case 17. M., a boy, aged 10 years, cut 7th October, 1793. Hemorrhage occurred, requiring a canula, armed with agaric, to be introduced; but, nevertheless, a rapid recovery ensued.
- Case 18. P., a boy, aged 3 years and 8 months, cut 9th October, 1793; stone small; recovery rapid.
- Case 19. T., a boy, aged 17, cut 4th January, 1794. Recovery.
- Case 20. T., a boy, aged 12, cut 2d May, 1795. Rapid recovery.
- Case 21. F., a young lad, cut 2d May, 1795. Rapid recovery.
- Case 22. R., a boy, aged 7, cut 2d June, 1795. The stone was fractured; the operation was protracted, and recovery took two months.
- Case 23. R., a man, aged 80, cut 27th May, 1796. He had hemorrhage, requiring the introduction of a canula. Recovery.
- Case 24. G., a man, aged 24, cut on the 3 Brumaire, year VII. (1797). Recovery.
- Case 25. R., a boy, aged 5, cut 16 Frimaire, year VII. (1797). The stone was large, and the seizing and extracting of it were difficult. Recovery.
- Case 26. A., a boy, aged 5½ years, cut 16 Floréal, year VII. (1797). Recovery.
- Case 27. R., a man, aged 75, enormous stone extracted by lithotomy on 10 Floréal, year VIII. (1798). Recovery.
- Case 28. L., a man, aged 47, cut 3 Fructidor, year VIII.; the stone was enormous. Recovery took place, but with a recto-vesical fistula, evidently originating in a wound of the rectum.
- Case 29. A., a boy, aged 9 years, cut 5 Floréal, year VIII. (1798). Speedy recovery.
- Case 30. R., a boy, aged 9 years, cut 6 Frimaire, year X. (1800); two small calculi. Speedy recovery.
- Case 31. G., a boy, aged 5 years, cut 20 Floréal, year X. (1800). Recovery.
- Case 32. B., a boy, aged 4 years, cut 24 Floréal, year XI. (1801); mulberry calculus. Rapid recovery.
- Case 33. B., a boy, aged 8, cut 9 Thermidor, year XII. (1802). Recovery.
- Case 34. D., a young lad, cut 2 Messidor, year XII. (1802). Recovery.
- Case 35. G., a boy, aged 4½, cut 27 Brumaire, year XII. (1802). Recovery.
- Case 36. C., aged 27, cut 3 Floréal, year XIII. (1803). The calculus was large and friable; the operation was prolonged. Recovery.
- Case 37. D., a boy, aged 13, cut 21 Floréal, year XIII. (1803). Recovery.
- Case 38. D., a doctor in surgery, aged 65; he had suffered for twenty years, but had never allowed himself to be sounded. Pain, at last, overcame his reluctance, and he was cut for stone on the 15th March, 1806. The stone was very large; but nothing untoward occurred, and recovery was rapid.
- Case 39. S., a man, aged 22, cut 3d June, 1806. Recovery.
- Case 40. C., a boy, aged 11, cut 13th September, 1806. Speedy recovery.
- Case 41. R., a man, aged 31, cut 6th December, 1806. From the large size of the stone, force had to be used in the extraction; nothing untoward occurred. Recovery.
- Case 42. T., a boy, aged 8, cut 24th October, 1806. The stone was large and friable; the child had suffered from his birth; the operation was prolonged: recovery took place, but there was a urinary fistula.
- Case 43. Servant, the curate of Tulette (Drôme), aged 68 years, was cut on the 9th May, 1808; he was a lusty subject, and the operation was laborious; but the success of the operation was complete—a fact worth notice, as Roux, the famous operator of the Hôtel Dieu, states that every ecclesiastic whom he has cut for stone has died.
- Case 44. S., aged 56 years, cut 2d of September, 1810; large stone. Recovery.
- Case 45. T., a man, aged 74, cut 3d of October, 1810. The stone was very large, and weighed 110 grammes (about 28½ drachms apoth. weight). In spite of the age of the patient, and the force required in extraction, recovery was quick and complete.
- Case 46. F., a man, aged 50, cut 15th October, 1810. Recovery.

Case 47. C., a man, aged 22, cut, 4th October, 1810. Stone large. Recovery.

Case 48. Madame Valentin, of Avignon, aged 25, cut 7th October, 1811. The stone was very large, and its extraction was difficult. The incision, which was low, and on the left, involved the vagina. Recovery took place, but she had incontinence of urine.

Case 49. Madame Cambon, aged 21, operated on in the same way as Madame V., on 10th November, 1812. She recovered, and had no remaining inconvenience.

Case 50. P., a boy, aged 12, cut 24th September, 1812. Recovery.

Case 51. Melin, aged 3½, lithotomy 17th May, 1814; small calculus. Speedy recovery.

Case 52. Reynaud, aged 64, large calculus extracted 12th May, 1817: considerable hemorrhage. Recovery.

Case 53. Joussaud, cut 16th June, 1817. Recovery.

Case 54. Jaume, suffered from birth, cut 14th June, 1817. From the number of calculi, the operation was laborious. Recovery in ten weeks.

Case 55. M., a woman, aged 58, cut 10th June, 1817. Very large stone. Complete recovery.

Case 56. R., a man, aged 17, cut 19th May, 1818. Success complete.

I now proceed to detail my own experience; *first*, in lithotomy; *second*, in lithotomy preceded by attempts at lithotripsy; and, *lastly*, in cases in which lithotripsy alone was performed.

Lithotomy. Case 1. M. Baldy, of Nîmes, aged 15, had, when six years old, been cut for stone, by M. Pleindoux. Till within two years, he had retained a fistula in perinæo; operated on, 2d March, 1832. Dismissed cured on the 8th April.

Case 2. M. Martin, of Avignon, aged 20, had suffered from infancy; but neither her pain nor the entreaties of her relatives could induce her to submit to an operation. The operation was ultimately performed on the 18th of January, 1837, under the disadvantageous circumstances of a presentiment on the part of the patient that she would not recover. Lithotripsy appearing inadmissible from the large size of the stone, and the very irritable state of the urethra. The stone weighed 77 grammes. For the first days, the patient appeared to be doing well; but, on the fourth, rigors and fever set in, and she died upon the 24th of January. On dissection, I found the mucous tunic of the bladder red and soft; there was pus in the iliac veins. The abdomen was distended with gas, and the peritoneum dotted with red spots.

Case 3. B., of Montoux (Vaucluse), aged 9 years, was operated upon, at his father's house, on the 21st of September, 1836. The stone weighed 10 grammes. Recovery was complete fourteen days after the operation; and the patient, who is now a military officer, has never had any return of the affection.

Case 4. M. C., aged 72, of Entrechaux (Vaucluse), a healthy old man, after suffering for four years, was operated upon on the 11th May, 1840. I removed three calculi, smooth, and presenting facets formed by friction against each other, and weighing, collectively, 80 grammes. The cure was complete on the 28th June.

Case 5. L., aged 21, of Fresney (Mayenne), who had suffered from his earliest years, was operated upon in hospital, on the 10th of January, 1841. The stone was bulky and indented, and weighed 45 grammes: it broke under the forceps, but was all removed, and the patient was dismissed cured on the 5th of February.

Case 6. M., a soldier, aged 27, of Bourret (Tarn-et-Garonne), was operated upon on the 18th of January, 1842, in hospital. The stone was hard, voluminous, and brown in colour; weighed 60 grammes, and was extracted entire. The wound showed an indisposition to heal, which rendered it necessary to introduce deeply the solid nitrate of silver. On the 17th of May, being four months after the operation, he went out completely cured.

Case 7. M., aged 15, of Villeneuve (Gard), a thin and irritable youth, had suffered from his earliest recollection; but his parents could never persuade him to allow himself to be sounded, till I was permitted to do this, and discovered a hard calculus with unequal surface. The extremely sensitive condi-

tion of the urethra rendered lithotritry inadmissible, and I performed lithotomy on the 20th of February, 1844. The stone was very large, and very light, not weighing more than 8 grammes. On the 22d of March the patient left the hospital, perfectly cured.

Case 8. N., a man, aged 27, of Labastal (Hautes-Pyrénées), had endured a miserable existence for a long time previous to his entering the hospital, on the 28th of February, 1845. I cut him on the 2d of March. The case presented a circumstance worthy of being mentioned. There was contraction of the bladder to such an extent as to impede the separation of the blades of the forceps. The stone, however, was seized and extracted; it weighed 32 grammes. Its appearance might have suggested the idea that it was a substance moulded in the bladder of a child. On its upper part there was a plane surface; but, upon digital exploration, I satisfied myself that there was not a second stone. The patient left the hospital cured, on the 11th of April.

Case 9. G., aged 4½ years, of Gravéson (Bouches-du-Rhône), had suffered from the time of his lactation. I performed lithotomy on the 22d of July, 1847, as, in young children, I infinitely prefer this operation to lithotritry. He was placed under the full anæsthetic influence of ether. I used polypi forceps, being an instrument which I prefer in children. I removed an oval calculus, of the size of a large bean; after which, I introduced my finger (as I always do in children), and discovered a second calculus, of the size of a pea, which was easily extracted by means of the index finger, without the aid of any instrument. The two stones, collectively, weighed 3 grammes. On examining the second calculus with care, it was found to be covered with facets, which led me to conclude that these were a group of small calculi; but, on again introducing the index finger, I found the bladder completely unembarrassed. The only explanation which can be given of these facets is to suppose that friction took place between the two calculi. The issue of this case was fortunate. At the end of a month, the child was well; and, though thin, he was in good health. I have seen him this winter, and can testify that he is a superb child, and in the enjoyment of perfect health.

Lithotomy preceded by attempts at Lithotritry. Case 10. A. B., of Avignon, aged 8 years, was brought into hospital on the 27th March, 1845. I detected a small calculus in the bladder; and, yielding to the wishes of the parents, though in opposition to my own opinion, consented to perform lithotritry. Having dilated the urethra, I introduced Charrière's modification of Heurteloup's lithotrite. I seized the calculus, and broke off a pretty large fragment, which was voided into the bath in which I placed the patient immediately after operating. The operation was quickly performed; but the restlessness of the patient induced such severe pain that I thought it my duty at once to propose lithotomy, as offering less inconvenience than lithotritry. I performed the operation on the 18th of April, and it was followed by quick recovery.

If we may judge from the complaints of the patient, he would seem to have suffered less from the operation of lithotomy than from lithotritry, although the calculus had been readily seized and broken. The calculus extracted from the bladder weighed 5 grammes; and the piece broken off by the lithotrite 1 gramme and 50 centigrammes.

Case 11. Mademoiselle P. M., aged 17 years, of Angles (Gard), had been the subject of calculus for some years, the existence of which she concealed for a considerable time. Her family attendant having discovered its presence, advised lithotritry, and she was placed under my care. On the 10th of May, 1847, I operated on her at Angles, in the presence of Drs. Salomon, senior and junior, Dr. Touzet, and others. The patient having been placed under the influence of ether, I easily introduced a No. 3 lithotrite, and immediately found a large calculus. The instrument was opened in the bladder with some difficulty; the calculus was broken at three attempts. The patient experienced no pain whatever; and, when she awoke, said she thought she was at church with her father. She was placed in a bath immediately after the operation, where she voided some fragments of the calculus; she also voided some fragments, and a large quantity of detritus, during the night.

The operation was twice repeated, at intervals of a few days; but we found that the calculus still remained large. The patient experienced pretty severe pain in passing the larger fragments; and on the last two occasions of operating, she suffered severe pain, and was very restless; she refused to be etherized. Considering it imprudent to continue lithotritry, we proposed that lithotomy should be performed. This was accordingly done on the 25th of June, 1847. We adopted the method improperly attributed to Dubois, but which, according to Paré, belongs to Laurent Collot, a surgeon of the sixteenth century. The incision was made directly upwards, with the lithotome of Friar Côme. As the calculus had been broken in several pieces, we had to introduce the forceps several times. The largest fragment measured 4 centimètres in its greatest diameter. The fragment which had been passed before this operation weighed 7 grammes; and those which we extracted amounted to 26 grammes. The result of the operation was most fortunate: on the twentieth day the patient was completely cured, and was able to visit me at Avignon.

This result must be allowed to be infinitely preferable to that which must have been produced by lithotritry. This proceeding would have required, perhaps, fifteen or twenty sittings, each nearly as painful as lithotomy, and have exposed the patient to the risk of fatal cystitis.

We now come to a case in which lithotritry was impossible, and lithotomy was the only resource.

Case 12. Mademoiselle M. M., aged 30 years, of Malaucène (Vaucluse), had, a month previously, introduced a pen-case into the urethra, which escaped, and fell into the bladder. She came to me, and, with much hesitation, confessed what she had done. I detected the presence of the foreign body by means of a catheter, and endeavoured, but in vain, to extract it with Heurteloup's lithotrite. It was easily seized; but, on attempting to extract it, resistance was encountered, and the patient was put to great pain. It was evident that the foreign body lay transversely, and that it was probably impossible to make it change its direction. We proposed lithotomy, which was immediately accepted. On the 19th June, 1847, having perfectly etherized the patient, I operated with a lithotome, making the incision directly upwards. I introduced the index finger of my left hand, and discovered that the body was actually placed transversely: I caused it to assume a longitudinal direction, and introduced a pair of polypus forceps along the finger, by the aid of which I extracted the substance without difficulty. It was almost entirely covered with an incrustation of phosphate of lime; there was a depression at the point where it had been seized by the lithotrite: it was 8 centimètres in length, and weighed 3 grammes.

The rapid success of this operation could not have been surpassed. Eight days after the operation, the patient was able to return home perfectly cured.

It is somewhat remarkable that, a few days after, I read in the *Bulletin de l'Académie* (15 July, 1847), an account of a perfectly similar case to that which I have just related, occurring in a male. As in my patient, lithotritry was impracticable, and lithotomy was followed by cure.

Lithotritry. Case 13. M. P., of Avignon, aged 68 years, had long suffered from calculus; but he would not consent to lithotomy. The pain, however, becoming more severe, the general health being impaired, and the urine depositing a glairy fetid matter, he was compelled to decide on an operation, and chose lithotritry. On the 25th January, 1832, after having previously calmed the patient with baths and refreshing drinks, we proceeded to the operation, using M. Civiale's instruments, which were then generally employed. Although I had several times performed lithotritry on the dead body, and had demonstrated it to the pupils at the hospital, this was the first occasion of my operating on the living subject.

The instruments were introduced easily enough; but there was difficulty in seizing the stone, from its large size, and from the contracted state and excessive sensibility of the bladder. At last, however, the stone was seized, and perforated in several points, by slightly relaxing the hold and rotating it. This sitting lasted eight minutes. A pretty large quantity of detritus was passed on the same day; on the next, the patient felt tolerably well; but, two days

after, there was tenderness and tension in the hypogastrium, with difficult passage of urine. This was ascertained, by means of a sound, not to arise from the retention of a fragment of the calculus in the urethra. A large number of leeches were applied; and baths, lavements, with calmative draughts and applications, were prescribed; but nothing could arrest the progress of the inflammation of the bladder. The patient went on getting worse, and died on the 26th February, a month after the operation. Although the cystitis only appeared on the third day, and death did not take place for a month, we think that no one can doubt that the lithotripsy was the cause of death. At the autopsy, we found the calculus broken into numerous fragments. It weighed altogether 52 grammes, and the nucleus bore the mark of the perforator. The mucous membrane of the bladder was red, softened, and covered with a layer of purulent mucus, having the appearance of a false membrane. The peritoneum presented some red points of inflammation. The abdomen was distended with gas; this had distressed the patient during the whole course of his illness.

Case 14. M. R., of Orange (Vaucluse), had lithotripsy performed by M. A. Jourkoski, on the 3d of October, 1841. I was not present at the operation, but only know that percussion instruments were used, and that there is no reason to doubt that it was performed skilfully. On the 5th of October, two days after the operation, I was called to the patient, who was in a state of ardent fever, with burning skin, tension, and pain in the abdomen, and difficulty in micturition. By aid of the catheter, I recognized the presence of a calculus, and drew off a large quantity of urine. The patient felt great pain in the bladder, and earnestly requested me to relieve him by an operation. I confined my treatment, however, to calmatives and antiphlogistics, but without any hope of a favourable result. In this I was not mistaken, for the patient died on the following day. An autopsy was not made. In this case, death was so evidently and rapidly the result of a single sitting of lithotripsy, that we do not think that the most ardent admirers of this operation can mistake it. We will now relate some successful cases.

Case 15. E. B., aged 16, of Tarascon (Bouches-du-Rhône), had been suffering for about a year, and was supposed to have a calculus. He came to Avignon to consult me; I recognized the presence of a small stone, and proposed lithotripsy, to which he consented. On the 5th of March, 1832, we operated with Civiale's instrument. The instrument was easily introduced, and the calculus was readily seized and broken up, being small and friable. The patient experienced severe pain during the search for the calculus, but afterwards did not complain. A pretty large quantity of detritus was passed in the warm-bath, and a larger quantity during the night; some of the fragments were rather large, and gave some pain. The whole of the detritus weighed 3 grammes. The next morning, the patient had no pain, and, though we sounded him on several occasions, we could discover nothing in the bladder. He was evidently perfectly cured. If lithotripsy were always attended with such results, it would be one of the most splendid operations.

Case 16. M. J. A., aged 82, of Avignon, presents us with an interesting case. He was a timid man, who had suffered for a number of years, but had never been able to determine to be operated on, not even to be sounded. At last he consented; and I recognized the presence of several apparently hard and resistant calculi, which gave a very distinct sound on being struck. Lithotripsy seemed the only practicable operation; it was accordingly performed for the first time on the 25th of February, 1833, with M. Heurteloup's instruments. The canal was very large; the instrument was easily introduced, and I soon seized a large calculus, about the size of an egg, which offered some resistance to the action of the lithotrite, but which I succeeded in breaking down. The patient groaned a good deal, but did not seem to suffer much; he appeared to have more fear than pain. He immediately voided a considerable quantity of detritus. Four days after, the operation was repeated with the same results, and we were obliged to have recourse to it fourteen times. He was under treatment up to the end of October; and there were several circumstances which gave me anxiety. On several occasions, the operation was followed by an attack

of violent fever; and the patient each time became more impatient of the operation, and appeared to suffer more. At last I had the happiness of telling him that I could find nothing in his bladder. The disappearance of pain confirmed my diagnosis; and, in spite of his advanced age, M. J. A. was restored to health.

It cannot be denied that, in spite of the pain and of the difficulties attending the operation, the success was due to lithotritry. The detritus, as far as they could be collected, weighed 20 grammes; but it is probable that the patient lost a considerable quantity.

Case 17. M. B., aged 22, of Bollènes (Vaucluse), had suffered for several years from a single and rather small calculus; his general health was good. On the 9th of May, 1840, we performed lithotritry with M. Heurteloup's instrument, and repeated the operation thrice subsequently. The patient returned home, perfectly cured, on the 9th of June. The detritus of the calculus weighed 6 grammes.

Case 18. M. A. A., aged 22, of Cébagola (Corsica), presents us with an analogous case. First sitting, 21st of March, 1842. Calculus of moderate size, but hard; operation performed with percussion instruments; cured on the 19th of April, after five sittings. We collected 15 grammes of detritus.

Case 19. M. P. R., aged 17, of Avignon, was as fortunate as the two preceding patients. On the 15th February, 1843, we operated for the first time; but the narrowness of the canal caused considerable resistance and pain. The calculus was small and friable; in fact, the smallest I ever met with. The collected fragments weighed 10 grammes. The operation was repeated four times, at intervals of a few days; on each occasion, fever supervened. The patient was cured in the space of a month.

Case 20. M. M., aged 25, of Borey (Haute-Saône), had suffered several years from stone. He told me that M. Pétrequin had discovered the existence of one, at Lyons; but he had not been able to determine to submit to an operation. Having, however, seen a patient, at Avignon, on whom I had operated, he requested me to perform lithotritry. To this I consented, and, on the 14th January, 1844, operated for the first time. The stone was large: the graduated scale on the instrument indicated 35 millimètres; it was easily broken down, but offered some resistance, which increased towards the centre. The patient experienced some pain, from the retention of one of the fragments in his urethra, and I was obliged to remove it with a three-branched forceps. The operation was repeated six days after, and, in all, nine times. The patient was under treatment during two months, and was found to be cured on the 11th March. The calculus weighed 30 grammes; it was formed of two layers; the external, soft, friable, consisting of phosphate of lime; the internal, hard, brittle, composed of uric acid.

REMARKS. When we take into consideration the duration of the treatment, the number of sittings which were necessary, the necessity of using Hunter's forceps to search for fragments—we may ask, whether lithotritry possesses any marked advantages over lithotomy. It will be seen that, out of sixty patients operated on by my father, there were only five deaths, or one in twelve. I have arrived at exactly the same result: of nine patients on whom lithotomy was primarily performed, one died; and of three, in whom lithotomy was preceded by attempts at lithotritry, none died; which gives one death in twelve cases of lithotomy.

In lithotritry, I have been less fortunate; for, in eight operations, seven by myself, and one by another operator, two patients died. This gives a proportion of one in four. I have three times found lithotritry useless, or attended with such inconvenience that I was obliged to have recourse to lithotomy. I know that it will be said that I do not praise lithotritry because I do not know how to perform it. This reproach, however, has been addressed to my illustrious masters, MM. Roux and Velpeau.

My father had five relapses among fifty-six cases; and in the case of M. Baldy, of Nîmes, I found a calculus in the tissue of the perineum. In seventy-two operations, then, there were six cases of relapse. I would desire much to know whether, in an equal number of cases of lithotritry, there would not be a greater proportion of relapses.—*London Journal of Medicine*, March, 1850.

OPHTHALMOLOGY.

47. *Malignant Tumour in the Orbit successfully extirpated.*—THOMAS PAGET, Esq., of Leicester, relates in the *Provincial Medical and Surgical Journal* (March, 1850), the following case:—

“George Lee, aged 19, was admitted into the Leicester Infirmary with his left eye protruding from its normal situation at least three inches. It is worthy of note that, though the optic nerve was stretched to this length between the foramen and the globe, vision was not destroyed. He could see with either eye singly. There was, at times, much pain deep in the orbit and on that side of the forehead. This mischief was effected by a tumour, which filled and projected beyond the orbit, thrusting the eye before it. It was of a lobulated form, and showed in parts a livid tinge. He came with a full determination to have it removed, if possible.

“I find the entry made on his admission runs:—‘Hydatid, encephaloid, or botryoidal tumour, arising within the orbit;’ and on consultation, as the nature of the case could not be more definitely settled, it was decided not to refuse an operation, but to dissuade the patient from it. With this view I kept him in the house more than a month, trying my best from time to time to ward off the responsibility of surgical interference; I had, however, promised him to remove it, if he wished, and he was firm in insisting upon my promise. I never saw more firmness of purpose.

“The orbit was emptied by excision. All present concurred in the malignant nature of the tumour, which now forms a fine specimen in our museum (bottle 47). It is now five years since the operation, and I have seen him recently (January 24th), entirely free from all appearance of disease, and anxiously inquiring about a glass eye, for which the palpebræ are, by freedom, power of motion, and natural look, well adapted. This disease had been in progress ten years.”

48. *Melanosis of the Eye.*—JOHN WINDSOR, Esq., Surgeon of the Manchester Eye Infirmary, records (*Provincial Medical and Surgical Journal*, May 1, 1850) the two following cases of this disease:—

CASE 1. Ann Drinkwater, residing at 15 Howe Street, Portland Square, became an out-patient of the Manchester Eye Hospital, August 1st, 1847. Her age is 43. The catamenia still appear, although irregularly and rather too frequently, but sparingly; her pulse 96; tongue clean, and the papillæ all over it much developed; bowels costive; appetite indifferent; she sleeps in general but badly. The left eye is occupied by a dark, red-looking fungus, the size of a very large apple; the surface of it is tolerably moist and smooth; almost the superior half is covered by the palpebra, which exhibits a dusky colour, and there are some tortuous prominent veins upon it. The tumour extends over the inferior palpebra (which, like the upper, is projected forward by it), and extended downwards so as to cover nearly the left upper half of the face. The sub-maxillary or other glands do not appear enlarged. She has a good deal of pain of the head on the affected side and round the tumour; she can lie easily only on the affected side; otherwise she feels the weight of the tumour unpleasant. The vision of the left eye was lost about three years since; she was suffering at that time a good deal of pain in the part, but nothing particular in the appearance was noticed until about three months since, when the eye began to project from the orbit, and soon became nearly as large as it is now. She can ascribe no cause for the complaint, except it might be child-bearing and exposure to cold. She has used no particular remedies, except lately some homœopathic ones. She was prescribed some aperient pills and anodyne powders to be taken occasionally, a saturnine lotion and zinc ointment as applications to the part.

19th. There is a gradual enlargement of the tumour of the orbit, and a number of small swellings—altogether seventeen—scattered over the surface of the body. They feel somewhat like enlarged glands, but present a discoloured rather dark bluish hue.

October 6th. Since last report, the orbital tumour has become still more enlarged, and has bled a little occasionally. She keeps it covered with linen cloths wetted in the lotion. She looks pale and emaciated; pulse 76; tongue clean; bowels regular at present; is attacked occasionally with sickness and vomiting; sleeps indifferently. She takes occasionally a saline (neutral) mixture, with a little tincture of opium. Besides the large tumour of the orbit, there are now two small ones about the size of a hazelnut, one on each side of the upper part of the head. The left mamma is pretty entirely occupied by two tumours—one on each side of the nipple; there is a rather large one occupying all that part of the right mamma, situated on the outer side of the nipple; and there are two more on the right side not far from the mamma, one loose, just under the integuments, and the other apparently fixed to the rib. There are two on the outer side of the right upper arm, and one on the outer middle part of the right forearm. There is one on the left side between the last rib and the os ilii, and a small one on the abdomen, a little above the umbilicus. In the right groin there are three or four small ones. Above the right ilium there are two, and one just behind the base of the scapula. In the lower part of the neck there are two, making in all twenty superficial tumours. The abdomen is generally tumid, hard, and tender when pressed, apparently from the pressure of several large tumours situated more internally than the above-mentioned ones.

Over the superficial swellings the integuments are, in some parts, little changed, but in most they present a bluish colour; when pressed these tumours feel hard, and she then generally complains of pain.

November 1st. There is little alteration since last report, except that she seems becoming gradually weaker. The tumours of the abdomen are numerous, large, and sore when touched, and, though not individually projecting, the abdomen seems generally prominent from them. The pulse is of moderate frequency and strength; tongue pretty clean; bowels irregular, being sometimes confined and sometimes relaxed; stomach occasionally disturbed with sickness and vomiting, at other times she has a tolerable appetite. She still uses the same means internally and externally.

January 15th, 1848. No great change since last report; the tumour of the eye is still larger, reaching now to near the angle of the mouth; it sometimes bleeds a little.

February 21st. For the last few days she has felt lower, with a good deal of nausea and occasional vomiting; her bowels have been rather relaxed; the fungoid tumour of the eye has bled rather more of late; she has occasional shooting pains through it, as well as through the other tumours, of which she reckons now sixty-one, without including a few upon her head; many of them, especially those situated quite superficially, and which are slightly prominent, present a bluish venous-like appearance, but over a great number of them the integuments are not discoloured or elevated; the abdomen is now almost everywhere studded with them. Continue saline mixture, opiates, saturnine lotion, and zinc ointment.

April 11th. She died this day. Since the last report the complaint had been gradually developing itself more and more in the number and increasing size of the melanotic tumours, and also in the wearing down of the constitution, although she appeared to bear her very suffering state with much fortitude; she became more and more emaciated in her limbs, whilst the bulk of the abdomen gradually increased; her pulse was nearly natural in frequency; her tongue generally clean; her appetite mostly indifferent, and the little food taken often partially or entirely rejected; her bowels irregular, being sometimes rather confined, but more frequently passing small and rather frequent dejections; she complained of a good deal of pain of the abdomen at times, and also of the head and eye, the last bleeding a little occasionally. About a month before her death a little oedema of the legs appeared, and distinct fluctuation of fluid in the abdomen was detected, which gradually increased; I therefore passed a trocar on the 4th of April, and drew off ten pints of a yellowish serum. A good deal of fluid continued to issue through the puncture for the two following days.

On examining the abdomen after the tapping, it felt as if filled with a great number of large round balls. She was not, however, materially relieved by the operation; the pulse became very small and feeble, beating about 96 in the minute; there was some vomiting at times, and a discharge of small, scanty, dark-coloured evacuations occasionally from the bowels; urine of a darkish yellow colour, and very turbid; the extremities gradually became colder, with failure of the pulse and facies Hippocratica. She died at 10 A. M., an hour afterwards, being sensible to near the last.

A *post-mortem* examination was made about thirty hours after death. The external appearances of the surface of the body were much the same as during life. Upon raising the sternum there appeared, partly adhering to it, and partly to the division of the pleura or anterior mediastinum, a melanotic tumour, about the size of a walnut; the left mamma consisted apparently of several melanotic tumours, viz., of two large ones, each about the bulk of a pullet's egg, and of two smaller ones, each about the size of a filbert; the right mamma presented nearly the same appearance, only consisting chiefly of two melanotic tubercles, one about the size of a pullet's egg, and the other that of a nutmeg. In the integuments a little below the right mamma there was a similar tumour, about the bulk of a hazelnut; nearly in the same situation, between the integuments and ribs, another appeared, adherent to the intercostal muscles, and, like most of the others, apparently contained in a thin envelop or cyst of cellular substance; in the right lateral portion of the thoracic and abdominal parietes appeared about a dozen melanotic tubercles, adherent to the integuments, and varying in size from that of a large filbert to a pin's head; about a similar number, but generally of a smaller size, appeared partly on the surface, and partly in the substance of the right lung; two or three, rather firmly adherent, were found close to the spinal column, just under the pleura; and on the left side similarly situated were two more, each about the size of a walnut. Both lungs were considerably adherent to the parietes; about half a dozen melanotic tubercles appeared on or near the surface of the left lung. In the substance of the heart there were several nearly similar tubercles. The liver was extraordinarily enlarged, occupying a great portion of the abdominal cavity, below extending to the ilium, and even to the pubes, also pushing up the diaphragm as high as the fourth rib; its natural structure was completely masked in an immense number of tubercles; on the outside of the left lobe, immediately under the peritoneal covering, there were about twenty, from the bulk of a hazelnut to that of a pullet's egg, or even larger; on the right lobe an innumerable crop of tubercles appeared; indeed the texture of the liver, large as the organ had become, seemed almost completely made up of the melanotic tumours. On the omentum there were also many, varying in bulk from that of a large pea to that of a large pullet's egg. On the surface of the right kidney there were four large ones, and in the substance of this organ, between the surface and tubular portion, about half a dozen appeared, nearly the size of a large pea; on the surface of the left kidney there were five or six, from the size of a pea to that of a nutmeg, and one of about the same bulk as the last was situated somewhat more internally; on the right side, between the right kidney and the os ilii, there was a very large melanotic tumour, equalling the bulk of a pretty large turnip; it was, like the others, filled with a black, grumous, apparently unorganized substance, but softer, looking somewhat like thick black paint. The spleen appeared pretty natural, except on its superior part, where, quite superficially, a few minute tubercles appeared. The uterine surface presented a large number of minute tumours. The right ovarium seemed to be chiefly composed of a melanotic tumour, the size of a filbert; the left ovarium seemed totally composed of one, as large as a moderate sized apple. There were a few about the intestines. On the head, between the scalp and cranium, there were six tumours, of various sizes. Neither the brain nor the interior of the blood-vessels were examined.

CASE 2. The next case of melanosis of the eye which I purpose describing, occurred in the person of John Bramwell, aged 58, from Derby, who applied to me 10th of September, 1848. The appearance of the eye as to colour and projection, with the consequent tension of the palpebræ, was very similar to what

occurred in Mrs. Jackson, and like her, when she first applied, he appeared to be in other respects healthy, and of a fresh ruddy complexion. The right eye projects considerably from the orbit. The natural appearance of the organ is lost, there being no sclerotic, cornea, iris, or pupil distinctly visible. The front of the eye presents an irregular surface from the palpebræ being strongly pressed forwards by three or four tubercular prominences situated behind them.

He lost the sight of the eye gradually about nine years since without the occurrence of any particular redness or inflammation; but for some time previously he had been troubled with frontal and temporal pain, or what he calls *tic douloureux*, and he knows of no other cause for the complaint. The eye has gradually enlarged for the last two or three years, and especially during the last.

October 1st.—Since he called upon me before, the eye has still further enlarged; the palpebræ are much distended by it, and the projections appear still more prominent; he has at times a good deal of shooting pain through the part. The adjoining parts and neighbouring glands seem to be unaffected, and his general health being apparently good, it was determined to have the diseased eye excised, which was done in the usual way, in the presence of my colleagues at the Eye Hospital. At his own request chloroform vapour was previously inhaled; by it the pulse was first excited, and rose to about 120 in the minute, with flushed face, and much congestion of the frontal veins, followed by a rather contrary state, the pulse sinking to 72, and the countenance becoming pale. In this latter state, the operation was performed. His feelings were benumbed, but he was not entirely unconscious of pain.

The eye being removed, the orbit was cleared of a good deal of remaining blackish substance, and care was taken to remove as much as possible the thickened vasculo-nervous matter at the very base of the orbit, from which there was a rather considerable flow of blood. Some lint was applied, and supported by a light bandage. An opiate was given to him, containing four drops of laudanum. A good deal of sanguineous oozing continued through the day. He went on afterwards pretty well.

The dressings were not removed till the fourth day; then he was dressed every other day for two or three times; afterwards daily.

The discharge was at first offensive, chiefly from the decomposing blood in the orbit, but in about a week the cavity looked clear, and filling up with florid granulations, being well washed out with a syringe at each dressing, and the palpebræ then simply covered with a little lint and adhesive plaster.

For the first few days after the operation, he took some antimonial saline mixture, and an aperient occasionally; but his pulse and general health were scarcely disturbed. On dividing the tumour immediately after the operation it presented throughout the character of melanosis. He was soon well enough to leave Manchester.

November 4th.—He came over again to-day for examination. He has no pain, but a feeling of some numbness on the right side of his face. The orbit is nearly filled up with granulations, and the lids are gently inclined towards it. His general health is good, he still washes the part once a day with a syringe and water, and applies a little lint and adhesive plaster.

December 26th.—He came over again to-day; he looks well and complains of nothing; has no pain of the orbit, which seems healed, and the palpebræ are somewhat inverted towards it.

He promised to return or inform me if anything particular occurred, but I have not heard of him since, and therefore hope that he continues quite well.

49. *Coincidence of Albuminuria and Amaurosis*.—Dr. LANDOUZY, in a paper in the *Gazette Médicale de Paris* (Oct. 20th, 1850), maintains that impaired vision is an almost constant symptom of that form of renal toxæmia, which is indicated by an albuminous condition of the urine. We have lately seen an interesting case of this coincidence. The following are Dr. Landouzy's conclusions:—

1. Enfeebled vision is a symptom almost constantly present in albuminous nephritis.

2. It is the earliest symptom of albuminous nephritis.
3. It disappears and returns simultaneously with the albuminous condition of the urine.
4. Albuminous nephritis ought to be considered as dependent upon an alteration in the ganglionic system of nerves.—*Lond. Journ. Med.*, Feb., 1850.

MIDWIFERY.

50. *New form of Obstruction in Head Presentations, from Posterior Displacement of the Arm.*—Professor SIMPSON stated to the Edinburgh Obstetrical Society (Feb. 13), that he considered the case to which he wished to direct the attention of the society an important one, because the peculiar obstruction in head presentations, which it illustrated, was, so far as he knew, hitherto undescribed. The form of obstruction consisted in one of the arms of the infant being displaced backwards across the neck or occipital region; or more properly speaking, it was the forearm that was thus thrown across the back of the head and neck, the arm being thrown upwards in a line with the body, in order to admit of this malposition of the forearm. In this abnormal position the displaced elbow and forearm of the child, first increased greatly the dimensions of the basis of the head; and secondly, these same parts formed a kind of projecting obstruction, which readily hitched and caught upon the brim of the pelvis, thus preventing the descent of the head. But the effects might be better judged of by detailing the case itself.

The patient had previously borne nine children. All the labours had been easy, and she had frequently been delivered so speedily, that the labour was over before the medical attendant could reach the house. In her last and tenth labour, pains came on about four in the afternoon, and the os uteri was not completely opened up till about ten o'clock. About an hour before, the membranes ruptured. At six next morning, Dr. S. received a note from her medical attendant, Mr. Charmichael, asking him to see her, as the head had remained in the same position at the brim for several hours, the uterine contractions were becoming weak, and the woman herself exhausted. On placing the patient deeply under the influence of chloroform, in order to make a complete examination, Dr. S. found the maternal passages perfectly relaxed and open, and the head of the child to be by no means large, and not even entirely filling up the brim. The vertex presented, and the face was directed towards the left sacro-iliac synchondrosis—a rare enough position, but one not in any degree calculated to account for the delay. On passing the examining fingers farther upwards in order to trace any possible obstruction, Dr. S. touched a projecting body (the elbow) beyond the left ear of the child; and on now making the examination more carefully, he traced this body backwards across the neck of the infant and found it to consist of the left forearm of the child thrown back posteriorly behind the head. Dr. S. then brought the hand downwards and forwards, believing that if it were converted into a head and arm presentation, the case might terminate without further interference. During the next half hour, however, the pains, which had for some time been weak, had little effect in forwarding the presenting parts, and as the child's heart had now sunk as low as 78 beats in the minute, Dr. S., in order to preserve the child, again chloroformed the patient deeply, and delivered the child by pedalic turning. The mother made a speedy recovery. The child soon cried strongly, and goes on quite well. Its left arm was for a day or two after delivery easily thrown into the position described. The occipito-frontal circumference of the head was afterwards measured by Mr. Carmichael, and found to be $14\frac{1}{4}$ inches; when the arm was placed in its anomalous position, the same circumference measured $15\frac{1}{2}$ inches. The circumference of the shoulders was $13\frac{1}{2}$ inches. The child was of about the usual size, and weighed $7\frac{1}{4}$ lbs.

The treatment of such a cause of obstruction, when it was once recognized, should probably consist of bringing the hand downward and forward over the

side of the head, so as to convert the case into one of simple presentation of the head and arm. Perhaps it might occasionally be possible to push the elbow forwards in the direction of the lower end of the sternum, and thus draw back the displaced arm into its normal position in front of the chest. If either of these measures proved impossible, or failed, then the pedalic version would be required.

The *diagnosis* of the case was the most difficult point in its management. And in this, as in other complications—as detention from intra-uterine hydrocephalus, &c.—the assistance of anæsthetics in midwifery was invaluable as a means of enabling the accoucheur to make a far more effective, and searching, and successful manual examination and diagnosis, in cases of obstructed labours, than it was possible to do when the patient was awake and incapable of bearing with steadiness, and without unnecessary suffering, the introduction of the hand for the purpose.

When a labour, as in the preceding case, notwithstanding steady and continued uterine contractions, becomes morbidly prolonged in a mother who had previously borne easily a large family, there was every probability of obstruction of some kind on the part of the infant. Dr. S. had seen two such cases, where the detention was the result of intra-uterine hydrocephalus. In the present instance, it was the result of the malposition of the hand. Some time since he had mentioned to the society two cases of tedious labour, which, several years ago, he had seen with Dr. Ziegler: in both, the head, despite of strong pains, remained in the pelvic brim without descending; in both the head was evidently not disproportionately large to the maternal passages; in both some point of the shoulder or arm could be touched by the finger on examination; and, perhaps, if the examination could have been made more complete by the use of ether or chloroform, which were then unknown, a malposition of the arm, similar to the one above described, might have been detected. Various cases are recorded of obstructed labours, with the head, as usual, presenting, in mothers who had previously had natural deliveries, and where the forceps failed to extract the child, and where even extraction after craniotomy was difficult. Some of these cases were in all probability instances of obstruction from dorsal malposition of the arm, or rather of the forearm. The late Dr. Campbell, shortly before his death, told Dr. S. of a case where there was no pelvic or other deformity on the part of the mother, no want of uterine contraction, and no disproportionate size of the head of the child, and yet he and others had entirely failed in extracting the detained infant by the forceps, and at last were obliged to open its head.

When looked for, Dr. S. believed, therefore, that the dorsal malposition of the forearm would be found a more frequent cause of obstructed labour than the total silence of obstetric authors on the subject might, *à priori*, lead us to suppose. Further, he considered the present case as interesting, not only as an instance of an undescribed species of malposition and obstruction, but probably as one of a new *class* of malpositions as yet unrecognized in any of our accounts of the mechanism of labour, and the malpositions of the child. It would probably be found that other degrees and forms of malposition of the arm might occasionally lead to the same result.

Dr. Cumming said that he had a distinct recollection of the case mentioned to Dr. Simpson by Dr. Campbell. The late Mr. John Kennedy had been in attendance on the patient during the greater part of the night. The labour had advanced regularly and naturally till the os uteri was of a tolerable width, and the vertex had descended some way into the pelvis, then, though the pains continued sufficiently powerful, though the head of the child was quite movable, and the soft parts of the woman were perfectly relaxed, no further advance was made. About mid-day Mr. K. sent for Dr. Cumming, expressing himself unable to account for the arrest of the labour. On examination, Dr. C. found matters exactly as they had been described, and was at first disposed to account for the retardation by the hand being tilted up under the chin; but on further consideration abandoned this idea, as in all the cases he had seen of delay from this cause, the head had descended deeper into the pelvis than in this case. Mr. K. and Dr. C. waited on for several hours, during which various efforts were

made to ascertain the cause of arrest; but as these were unavailing, as the pains were becoming more inefficient, and tenderness of the abdomen was threatening, they resolved to apply the forceps. The instruments were accordingly applied without difficulty, and Mr. K. used all the exertion he thought justifiable, but without the slightest effect. Dr. C. then made similar exertions equally fruitless. After a time Mr. K. resumed, and Dr. C. again followed him, but with the same result. At this stage they deliberated as to their next course of procedure. The head had not advanced in the slightest degree in spite of all their traction; it was still quite unimpacted and movable. There was no discoverable contraction of any of the dimensions of the pelvis. It was the third or fourth pregnancy, and in her previous labours the patient had had nothing uncommon, certainly nothing instrumental. What *could* be the cause of arrest? They confessed themselves fairly baffled, and sent for Dr. Campbell, who lived in the neighbourhood, and who, with his usual kindness and promptitude, was soon at the bed-side. On his first examination, he was inclined to think that his less experienced friends had been premature in their resort to the instruments, and hinted disapprobation. Operations were therefore suspended till he should see the effect of the pains. He was soon satisfied that, for the woman's sake, if not for the child's, the use of the forceps was advisable. They were applied, and he pulled at first with great caution and forbearance, but with the same result as his friends. To shorten the details, the three doctors pulled in succession with all the force they thought justifiable, but without effecting the slightest advance. The state of the woman now indicated that no further delay should take place. Dr. Campbell accordingly used the crotchet, and the delivery was soon accomplished. Dr. Cumming has no distinct remembrance of what occurred after the extraction of the head, nor is he aware that there was any mark about any portion of the child to indicate the cause of detention. In subsequent conversation, it was confessed that to all the three doctors it was a mystery; but Dr. Cumming said that he could well believe it to have been such a case as that so distinctly and satisfactorily made out by Dr. Simpson. Had the chloroform then been in use, the examination might, and probably would, have been made with more boldness, freedom, and success.

Dr. Simpson observed, that sometimes, in women who had previously borne a large family, a cause of obstruction might exist in a late labour, not on the part of the child, as was generally the fact, but on the part of the uterus. Last summer he saw, with Dr. Skae, a case of this kind, where the source of detention was a firm and contracted circular band of the uterus around the site of the neck of the child.—*Monthly Journal*, April, 1850.

51. *Case of Spontaneous Expulsion of the Child.*—The following case, of what was termed by Denman "*spontaneous evolution*," read before the Medico-Chirurgical Society of Aberdeen, by Dr. ROBERT DYCE, and published in the *Monthly Journal of Medical Science*, May, 1850, is interesting, not only for its extreme rarity, but also for the many untoward circumstances which accompanied it:—

"I was called about midnight on Saturday, 30th December, 1848, by a midwife, to visit Mrs. C——, the wife of a tradesman, living in Castle street. I was informed that labour had commenced in the evening about six hours before—that the presentation remained long high—that the membranes ruptured naturally—that the waters were in great quantity—and that several strong pains had followed after the discharge of the waters, before any part of the child could be felt—a limb was at length reached, which was made out by her to be an arm. When I first saw the patient she had very strong forcing pains; the arm was at the top of the vagina, doubled up so as to present the elbow. A part of the child, nearly equal in bulk, was felt on either side of the presenting limb, viz: one part near the pubes, and the other near the sacrum, but so high that, unless I had passed my whole hand into the vagina, which I did not at the time deem essential, the individual parts could not be made out. It was sufficient for my purpose that the arm presented, and that delivery could not be accomplished without turning the child. In order, therefore, to render the operation easier, by quieting the uterine action, which was very powerful, I gave her, as soon as it could be procured, a teaspoonful of laudanum, deter-

mining to operate the moment a lull took place. This, however, never happened, for presently the pains forced the elbow lower, the hand came down into the vagina with hardly any assistance, and was ascertained now to be the right one. At this time the proportionate size or bulk of the two parts of the child became remarkably altered. The arm, shoulder and neck, which formed one part, pressed towards the pubes, and appeared smaller; while the other end of the tumour, which was now distinctly made out to be the back of the child, along with the ribs and spine, which was twisted and bent, now came completely to occupy the hollow of the sacrum. It now became very apparent that nature was to complete the delivery herself, by expelling the child double, or by what is called spontaneous expulsion. At length, after two or three powerful pains, the shoulder was very closely pressed, or jammed rather, against the arch of the pubes, and at length external to the vulva, while the breech pressed out the perineum, and was expelled by a very long and powerfully continued pain, the feet following quickly in its wake, the arm never moving from its position under the pubes. The head soon followed, and the delivery was speedily completed. The child (a girl) gasped once or twice, but could not be recovered.

The size of the abdomen indicated the presence of another child, which, on examination *per vaginam*, was confirmed, as the membranes were reached. I also discovered in the examination a circumstance by no means desirable, viz.: that the integuments of the abdomen, limbs, face, and in short, the whole body, were extensively œdematous, for lying, as the patient did, with her back towards me, I had no opportunity of discovering this before.

No pain coming on in half-an-hour, the membranes were ruptured. The waters were in very great quantity. An arm again presented, but along with the head. It was attempted to keep up the limb, so as to let the head descend alone; but the pains were so violent that both head and arm were forced into the pelvis, and expelled together. The breech remained during two or three equally severe pains at the birth, owing to the cord, which was very short, being twisted round one thigh and leg, by which it was tucked up tight upon the infant's abdomen; its removal immediately caused the expulsion of a second girl, alive and strong. In a quarter of an hour pains returned, but no part of the placenta could be felt; and as the uterus felt contracted, small and tolerably defined, while no hemorrhage at first ensued, no interference was resorted to. Very shortly, however, the pains became very severe, along with hemorrhage to some extent, so as to lead me to fear that irregular contraction either had taken place or was impending, and that probably one of the placentæ might be separated. The hand was immediately introduced. One placenta was found loose in the lower part of the uterus, a portion of the other in the contracted part, while by far the largest portion was imprisoned above, in the upper chamber of the uterus. The usual methods were carefully tried to separate the placenta, viz., by patting it, by grasping it from its edge to its centre, while the uterus was steadied by the hand on the abdomen externally; but no impression was made upon it. It was then attempted to remove it bit by bit; but so firmly was it attached, and to so very large a surface, that I for a moment hesitated what was best to be done—whether to persevere carefully in my present proceeding, or to leave some of the lobules adhering to the uterus. Both methods were attended with danger; but knowing well the great risk there is in separating a strongly and morbidly-adherent placenta, from the difficulty in distinguishing the soft and loose structure of the womb from the mass of the placenta, I decided on the latter method. I therefore kept my fingers close to the placenta and pinched off several of the lobules and left them adhering to the uterus. The womb now contracted regularly, and expelled my hand and the placenta together. Hemorrhage ceased, and the pulse, when I left at two in the morning, was 86. The woman had a most perfect recovery.

52. *Lingering Labour from a Stricture of the Uterine Parietes around the Child's Neck.*—Dr. SKAE stated (Meeting of the Edinburgh Obstetrical Society Feb. 13), that accidental stricture of the uterus during labour, and especially

before the separation of the placenta, as a consequence of irregular or spasmodic contraction of its walls, was an occurrence by no means unfrequently met with; but the following case of uterine stricture was one of quite a different character. The contraction was of a permanent kind, and probably had been developed in the course of utero-gestation, offering an insuperable barrier to the progress of labour, so far as the effects of antispasmodic treatment could be brought to bear on it. Its relation, indeed, to accidental stricture is so similar to that between accidental and unavoidable hemorrhage as to warrant its being called unavoidable stricture. The patient in whom it occurred complained of a feeling of tightness across the lower part of the abdomen during the three last months of gestation, and had a strong impression on her mind that all was not right with her, for she had on no former occasion experienced the same feeling, although she had had a large family, and once or twice twins. The particulars were as follows:—

Dr. S. was sent for by Mrs. C. on the morning of Tuesday, the 12th of June last, as she thought herself in labour. Examination discovered no indication of incipient parturition, and an opiate, followed by castor oil, was prescribed, on the supposition that the pains, which were said to have been steady and severe for some hours, were of the ordinary character of the spurious pains which so frequently precede labour. Notwithstanding repeated opiates, however, the pains abated but little during the subsequent forty-eight hours, when dilatation of the os uteri began to show itself. During the whole of Thursday the 14th, labour progressed favourably, so far as dilatation of the os was concerned; but it was only about four or five o'clock that the presentation could be distinctly made out, when the head could be found to descend to the brim during the pains. The patient continued suffering, apparently from severe labour pains, with but little change in the position of the foetal head till past midnight. The head descended, during the pains, to the brim of the pelvis, but never entered it, although an attempt was repeatedly made to steady it in its most favourable position for descent. Edema of the os uteri now showed itself, and the strength of the patient began to flag. Dr. S. therefore made two or three attempts to bring her under the influence of chloroform, but unsuccessfully, for she resisted with all her strength, being firmly determined not to take it; and his only assistant was an elderly female, who was worse than useless from alarm and agitation. By this time he felt satisfied that the obstruction to labour must be of some unusual kind, for the pelvis was large and well formed, and the size, firmness, and configuration of the child's head opposed the idea of hydrocephalus. He therefore sent for Dr. Simpson, at 2 A.M., and they succeeded in speedily putting her under a full dose of chloroform, when the cause of obstruction was found to depend on the presence of a rigid stricture, situated in the lower third of the uterus, upon which rested the shoulders of the foetus. After administering 120 drops of sol. mur. morphia, and keeping her pretty deeply under the influence of chloroform for two hours, it was found that no material relaxation of the stricture had taken place, to admit of turning without endangering the integrity of the uterine walls. It was feared that evisceration might be ultimately necessary, but employment of the long forceps was resolved upon, notwithstanding the unusual difficulty of applying them so high up, as necessarily to require their being locked within the vagina. Dr. Simpson, however, with his accustomed tact and dexterity, succeeded not only in applying them, but also in accomplishing delivery in some fifteen or twenty minutes, by dragging the shoulders of the foetus through the stricture. In this case, both mother and child did well, the recovery being unattended by any unfavourable symptoms.—*Monthly Journal*, April, 1850.

53. *Rare Obstetric Cases.* By C. D. PURDON, M. B., of Belfast.—1. *Hydrometra.*—A young lady, aged 18, of lymphatic temperament, middle size, chest well developed, breasts without any areola, abdomen very large, states that about nine months previously the catamenia ceased, after great mental agitation, and in some weeks she began to have regular attacks of morning sickness, and after a short time perceived her abdomen to be enlarged; from this she went on increasing in size regularly until the ninth month, when she appeared

in the last stage of utero-gestation. The os uteri was now quite small and virgin-like, cervix long and thin, the uterus appearing much depressed; she had slight œdema of the feet. At this time she suffered from an attack of enteritis, which yielded to the usual remedies; in some days after, she had a slight bloody discharge from the vagina, which soon ceased of its own accord. She then had regular paroxysms of apparent labour pains for three consecutive nights, being well during the day, when a yellowish coloured serous discharge began to issue from the uterus, and continued for four weeks, the abdomen falling gradually each day, till at length it attained its usual shape and form. In a few weeks she had a regular catamenial discharge. She is now perfectly recovered.

2. *Vicarious Lochial Discharge*.—Attended Mrs. — of her seventh child. The labour natural, and everything went on well till the eighth day, when I was informed by the nursetender that the lochia had entirely ceased, and that there was a reddish-coloured discharge from the rectum. Her pulse at this time was only 72, there was no pain on pressure, and she had not the slightest fever. By using appropriate means, the lochia, after forty-eight hours, returned to their usual channel.

3. *Labour without any Pain in the second Stage*.—Mrs. —, aged 21, was taken ill of her first child, at seven in the morning, and had frequent dilating pains for about three hours; these ceased on the rupture of the membranes, and she appeared to be free from all pain, when she suddenly said that there was something pressing down, and on going to examine, I found the head pressing on the perineum. The head advanced rapidly with each uterine contraction. She lay quite still, with eyes half closed, till the child was expelled, without any sensation of bearing down, or expressing that she felt any pain.—*Dublin Quarterly Journ.*, Feb., 1850.

54. *Operation for Calculus Vesicæ during Labour*. By M. MONOD.—A woman, aged forty, pregnant for the first time, had been in labour several hours; the membranes were ruptured, the pains frequent, but the labour did not advance, by reason of a large tumour on the anterior wall of the vagina. The tumour was hard to the touch, and completely filled the entrance to the vagina. From its form, position, &c., it was readily recognized as a vesical calculus. A sound, passed into the bladder with difficulty, confirmed the diagnosis.

M. Monod, finding that the operation of lithotripsy was inapplicable, at once proceeded to remove the stone by an incision into the walls of the tumour. A curved bistoury, guided by the forefinger of the left hand, was passed into the vagina, and an incision made into the tumour. The stone was removed by the finger only; it weighed nearly three ounces; its surface was irregular, and its form that of a shallow bowl.

The patient had been previously chloroformized, and, as the state of insensibility continued after the removal of the stone, the forceps were employed to complete the delivery. The child breathed, but died in a few seconds, death being attributed to the pressure of one blade of the forceps on the umbilical cord, which was twisted round the neck.

The patient recovered with an untoward symptom. The urine passed by the urethra on the following day. This M. Monod explained by supposing a swollen condition of the edges of the wound produced by the manipulation necessary for the removal of so large a calculus through an aperture so small as he had made.—*Monthly Journal of Med. Science*, May, 1850, from *L'Union Médicale*.

55. *Remarkable Case of Retention of Urine after Delivery*.—M. MALGAIGNE was called to a woman on the fourth day after her delivery, in consequence of the various attempts at relieving retention of urine by catheterism having failed. The abdomen was as much swollen as prior to delivery, and the woman was in a state of dreadful suffering. On inquiring, M. Malgaigne learned that both she and one of her daughters urinated in a different manner from other females, the jet passing upwards and in front, and he concluded that the urethra mounted higher up in front of the pubis than usual, and that this bone had prevented the passage of the catheter. By directing the instrument first from above down-

wards, then turning it, and pushing it upwards and backwards, he easily reached the bladder. He was perfectly astonished at the enormous quantity of urine that came away, this far exceeding anything he had ever witnessed before. By weight it amounted to 3300 *grammes*, and by measure to three *litres*, that is between eight and nine apothecaries' pounds, or between five and six imperial pints.—*British and Foreign Medico-Chirurgical Review*, April, 1850, from *Revue Médico-Chirurgicale*, tom. vi. p. 374.

56. *Cases of Tetanus coming on after Abortion.*—Two cases of tetanus coming on after abortion, were communicated to the Edinburgh Obstetrical Society, on the 13th of February last. The first case, related by Dr. A. Wood, occurred in a woman 36 years of age, stout made, florid complexion, who, after menstruation had been obstructed for three months, was seized, on the 16th November, 1845, about 3 A. M., with a copious coloured discharge from the vagina without pain. When seen at 7 A. M., countenance pale; pulse quick and weak; discharge abundant, and mixed with coagula; uterus enlarged; os uteri flattened, and slightly open. The vagina was plugged, and sugar of lead and opium were given. The plug was removed in two hours by the nurse, on account of the uneasiness which it caused. On the 17th, the discharge, which had been abundant all yesterday, increased to-day, and was accompanied with large quantities of coagula; os uteri sufficiently open to admit the finger; the uterus seems full of coagulated blood. Under treatment the discharge abated, and in a few days she was so far recovered that Dr. Wood took leave of her. On November 23d, he received a hurried message to see Mrs. C. in the evening, but being detained with a bad case of labour, did not see her until November 24th, at 7 A. M. He found that the bowels had not been open since the 25th; had been complaining all day of stiffness of the jaws and sore throat, for which Dr. James Simpson, the family medical attendant, who had seen her in his absence, had prescribed fomentations of chamomile flowers. The stiffness of the jaws was considerable, and they were opened with such difficulty, that it was impossible to see the throat; pulse 80, soft and compressible. In the forenoon the bowels were freely opened by a turpentine enema; the stiffness of the jaws had, however, increased; acute pain in the spine was complained of; the abdominal muscles were stiff, and swallowing difficult. A sedative draught was now administered. On again visiting her in the evening, Dr. W. found that no relief had been obtained from the draught. She had had a tetanic spasm at 6 P. M.; and while visiting at 7 P. M., a second occurred. She could no longer swallow. Professor Syme was now consulted. Injections with tobacco, Indian hemp, and opium were prescribed, but the convulsions continued to increase in frequency, and she died at 10 A. M., on the 26th.

In Dr. Malcolm's patient, tetanus supervened upon a severe attack of cynanche tonsillaris, with which the lady was seized upwards of a fortnight after she had suffered from abortion at a very early period of pregnancy, and from which she had satisfactorily recovered. When Dr. Malcolm was first called to see this lady she was suffering from inflammation and ulceration of the cervix, but had not the least suspicion of being in the family way. The treatment of this state of the uterus was commenced in the usual manner. In a few days, however, she was taken with the symptoms of abortion, which speedily followed. In the course of about a fortnight, she had recovered so far that the usual daily visit was discontinued. About this time, having taken some liberty with herself, she caught cold. The cynanche tonsillaris was severe; and on the second day it was accompanied, as often happens, with inability to move the jaw. On the third day, the symptoms were all very much aggravated, but presented no peculiarity. On the fourth day, she still continued very feverish and ill, and about noon she was seized, for the first time, with general tetanic spasms. She was seen in this fit by several physicians in the absence of Dr. M. When Dr. M. called the fit had ceased. After two hours the tetanic spasms returned with increased violence, and did not cease till she died, in the course of a few minutes.

Dr. SIMPSON observed, that he had seen a patient die of tetanus after a uterine lesion, but not after abortion. In the case he referred to, and which

Professor Syme saw with him, a very large soft cellular polypus was detached and thrown off by the spontaneous efforts of the uterus. A few days subsequently the patient had difficulty in opening her mouth. She died in the course of about fifty hours, with all the symptoms of general tetanus. In some of the Registrar-General's Reports on the Causes of Death in England, two cases of death from tetanus after child-birth are noticed.—*Monthly Journal*, April, 1850.

57. *Gangrene of the Vulva.* By M. MONAT.—Cases of this nature are not extremely uncommon as occurrences after labour at the full time, but they are in the highest degree rare, at least in the adult, as cases of spontaneous disease, or as a consequence of abortion in the early months of pregnancy.

A young woman, after a miscarriage, without any known cause, between the second and third months, was seized with violent inflammation of the labia. In spite of assiduous treatment with local emollients, leeching, &c., gangrene came on at the third day. The labia majora were both completely destroyed. The patient soon recovered.

Sometimes this disease is epidemic. Such was the case in Lyons this winter. Six cases are recorded in the "*Gazette Médicale de Lyon*," where gangrenous ulceration of the vulva, vagina, or uterus came on after delivery. In 1815, and again, four years afterwards, the disease was epidemic in the Hôpital de la Charité.—*Gazette des Hôpitaux*, March 29, 1850.

58. *Puerperal Mania.*—In a very interesting paper on the Mental Disorders of Pregnancy and Childbed, by Dr. F. CHURCHILL, in the *Dublin Quarterly Journal* for Feb. last, the author briefly enumerates the following as the elements which may concur to produce an attack of puerperal mania:—

"We have the nervous shock varying in degree, but always increasing the nervous irritability, the great vascular change, the disturbance of respiration and circulation, the exhaustion, and in many cases the loss of blood; this combination must necessarily leave the nervous system in a favourable state for the operation of the exciting causes I have enumerated, and the result is mania.

"The treatment of puerperal mania," he remarks, "is very simple as regards the materials, yet requiring calmness and judgment in their application.

"1. Those who regard it as any modification of phrenitis, of course recommend blood-letting, with more or less liberality. Now, from what I have said as to the nature of the disease, it will be clear that for these cases it is inadmissible, or, if ever used, it must be with extraordinary caution, and by means of leeches, in cases where there is strength and quickness of pulse, and flushing of the head and face. I have, however, never found it advisable; and Esquirol, Haslam, Gooch, Burrows, and Pritchard, are all opposed to it. The last-named author remarks: 'If we consider that the greatest danger to be apprehended for patients labouring under puerperal madness arises from a state of extreme exhaustion, that many women die from this cause within a short interval from the commencement of the disease, and that, if they survive this period, the healthy state of the mind is in most instances restored, it will be evident that our chief endeavours must be directed to the present support of life.' 'Blood-letting, as a general remedy for puerperal madness, is condemned by all practical writers, on whose judgment much reliance ought to be placed.'*

"2. When the stomach is overloaded, when indigestible food has been taken, or even for the purpose of lowering the pulse by the shock of vomiting, emetics have been found useful. They must, however, be used with caution when the face is pale, the skin cold, and the pulse quick and weak. Dr. Gooch prefers ipecacuanha to antimonials. Dr. Burrows recommends nauseating doses of tartar emetic, with the saline mixture and digitalis, for the purpose of reducing the violence and fury of the patient; and Dr. Beatty informs me that he has derived great advantage from tartar emetic.

"3. From the almost universally disordered state of the bowels, great relief is afforded by one or two brisk purgatives of calomel, followed by castor oil or Gregory's Powder. The stools are dark-coloured, and highly offensive; and in

* On Insanity, p. 313.

addition to the advantage of clearing out the bowels, purgatives act admirably as derivatives from the head.

"4. After the bowels have been freed, the greatest benefit will be derived from narcotics. Denman prefers small and repeated doses of opiates, but Gooch, Burrowes, and Pritchard recommend full doses, and with this I concur: ten grains of Dover's powder, twelve drops of black drop, or an equivalent of the other preparations of opium. If opium disagrees, hyoscyamus may be given; and should sleep be induced, repeated small doses may be administered; when the head is very hot, and face flushed, we should postpone the exhibition of opium, and we must guard against constipation.

"5. The head may be shaved, and a cold lotion applied; if the delirium continue, a blister may be applied, but it is not generally necessary.

"6. In protracted cases, or when the patient is exhausted, nourishing diet, broths, &c., and even tonics, must be allowed; ammonia, with cinchona; oil of turpentine, &c.

"7. As uterine inflammation not uncommonly arises in the course of, or follows puerperal mania, a close watch should be kept for the earliest symptoms, and if they appear, calomel in small and repeated doses, or mercurial inunction, should be added to the other remedies, with such other local applications as may be deemed advisable.

"8. It will be necessary to keep the most careful watch upon the patient; the nurse, who ought, if possible, to be one familiar with such attacks, should never leave the room; friends ought to be absolutely refused admission; the apartment kept slightly darkened, and the entire house perfectly quiet.

"9. When the mania disappears and the patient is convalescent, a change of air and scene is most advisable."

59. *On the Administration of Chloroform in Midwifery, and as a Sedative of Uterine Pain generally.* By J. HENRY BENNET, M.D. (*London Journal of Medicine*, March, 1850.)—The author states that his experience of chloroform, during the last two years, fully corroborates the opinions he formerly advanced favourable to the use of the article in irregular and operative labour, dysmenorrhœa, and uterine pain generally. Dr. B. administers chloroform in four classes of cases: I. In irregular but natural labour. II. In operative labour. III. To facilitate operations on the uterus. IV. To subdue uterine pain in dysmenorrhœa, &c. In natural labour, Dr. B. seldom resorts to chloroform, unless it be occasionally to facilitate its last stage, or to allay some morbid conditions of the nervous and circulatory systems, which may be interfering with the progress of parturition. The pains of labour are sometimes partially arrested, diminished, or rendered irregular and inefficient, by fear, impatience, want of self-control, or by long-continued suffering. When this is the case, chloroform generally exercises an all-but-magical effect. Under its influence, all nervous excitement is soothed, the pains gradually become more regular, powerful, and efficient, and the labour once more progresses normally. This return of the labour-pains, and their regularization under the calming influence exercised by chloroform on the brain, probably explains the increase in their intensity, noticed by some writers, on its first administration; and thus is explained the apparent discrepancy of different observers, on which so much stress is laid by the opponents to chloroform. If the pains are arrested or modified by nervous reaction, they return; if, on the contrary, they are too violent and prolonged, as is sometimes the case in the latter stages of parturition, when the soft parts are rigid and irritable, the intensity of the pains diminishes on the withdrawal of the excess of stimulation.

The disordered state of the circulation, and the congested condition of the capillaries, which are often observed in the cases to which I have alluded, also give way, in a most remarkable manner, to the calm produced by the inhalation of chloroform. This is so much the case, that since I have had recourse to it, I have never found it necessary to bleed from the arm during labour; the inhalation of chloroform having always been indirectly efficacious; even in some cases in which the cephalic congestion was so great as to make me fear convulsions.

When administering chloroform in simple midwifery, Dr. B. never gives it to such an extent as to annihilate pain, but merely so as to allay or deaden it; in a word, he does not attempt to render the patient totally unconscious of her sufferings, but merely to render them bearable. In operative midwifery, the anæsthesia must necessarily be pushed further, that is, to the surgical extent, as the intention is then both to render the patient unconscious of what is done, and to obtain the muscular relaxation to which this stage of anæsthesia gives rise.

"At the same time," Dr. B. says, "although thus supporting the use of chloroform, I feel bound to repeat, that the fatal cases which have been published prove that its inhalation is not *altogether* free from danger to life. Neither does it appear that this danger can be avoided by the greatest caution; death having followed, as I have already stated, the administration of an insignificant dose in the hands of experienced practitioners. It would indeed seem as if, in the cases to which I allude, chloroform had acted as a deadly poison from the first moment of inhalation. These cases must, therefore, teach us not to resort to it without a good and sufficient reason, and not to urge it on unwilling patients. For my own part, I am perfectly prepared in my own person, again to run the risk, such as it is, should I be again called upon to suffer a painful operation; and, consequently, I feel no hesitation in giving it to any one else who, like myself, may wish to avoid pain at a very trifling risk.

"We must not forget, however, that the dangers of chloroform inhalation have only been exemplified in surgical cases, and that no parturient woman has died during, or from its administration. They are, in reality, less exposed than surgical patients, as anæsthesia need not be carried so far; moreover, the entire economy is during labour in such an increased state of stimulation, that the vitality of the patient would, I think, be much less easily subdued, than in one who is depressed by the dread of a surgical operation."

60. *Insanity from the Use of Chloroform.*—In our preceding Number, p. 529, we noticed a case of insanity from the use of chloroform during parturition, communicated to the Westminster Medical Society, by Dr. WEBSTER. Three similar cases were related at a previous meeting by the same gentleman, and we now give the report of them:—

CASE I.—In this instance the patient, who had been delivered under the influence of chloroform, was, for three days subsequently, constantly incoherent and rambling. She soon after became perfectly maniacal, and so furious as to require confinement in a lunatic asylum, where she remained for twelve months, when the lady was discharged, cured.

CASE II.—This patient never recovered from the effects of the chloroform exhibited during her confinement; and soon afterwards became quite maniacal, and continued so for many months, but she recovered ultimately.

CASE III.—As this example might perhaps be considered by some psychologists not a true instance of insanity, Dr. Webster related the chief symptoms manifested by the patient, in order to remove all doubts on the subject. In the case reported, the cerebral disturbance following the exhibition of chloroform during delivery, never ceased entirely; the patient could not sleep at night for a long time, and often said she felt as if in the presence of a madman who was going to murder her. Three weeks afterwards she became almost maniacal—exhibited much mental excitement, laughing frequently; had a strong desire to sing, with other extraordinary feelings; conducted herself like an infant, and lost her memory; in which state the patient continued during five months, when recovery took place.—*Psychological Journal*, April, 1850.

61. *A Series of Cases Illustrating the Contagious Nature of Erysipelas and of Puerperal Fever, and their Intimate Pathological Connection.*—A communication was read to the Edinburgh Obstetrical Society (Jan. 9, 1850), from Dr. HILL of Leuchars, detailing a series of cases of erysipelas, and of puerperal fever, which illustrated very strongly the intimate pathological connection between these two diseases. From the cases related, it was evident that the same poison, whatever was its nature, might cause ordinary erysipelas in some subjects, and

puerperal peritonitis in child-bearing women, when they were exposed to its influence.

In the month of June, 1848, a carpenter in the village of Leuchars, wounded his hand while making a coffin; and subsequently, when putting the corpse into it, he felt some fluid from the body come in contact with the wound in his hand. In a few days the hand swelled up, and a severe attack of erysipelas ensued. Soon afterwards, his wife was taken severely ill with a similar attack in the right hand and arm. Both of them ultimately recovered. During their illness, however, their daughter, a young servant girl, in the seventh month of pregnancy, and who had come to their house to be confined, was seized with a feverish attack, for which I prescribed. On my way home, after visiting this girl, I was called to a woman in labour, who was confined in the course of two hours. Next morning the servant girl (the carpenter's daughter) was taken with labour, and soon gave birth to a dead child, whose body had all the appearances of being affected with the same disease as the arms of the mother's parents previously were. She herself never rallied after delivery, but died in the afternoon of the same day, with all the symptoms of malignant puerperal fever. I immediately informed the friends of the woman whom I had delivered the day previously, that I should not again visit her, unless serious symptoms came on, demanding my attendance. On the third day after her delivery, I was sent for, and found her labouring under puerperal fever. She, however, gradually recovered under treatment.

On the 30th August, 1849, I was called to see a girl, eight years of age, affected with erysipelatos inflammation of the skin of the right parotideal region. The gland itself was considerably swollen, and there was slight fluctuation in it. After being fomented for a few days, a large quantity of matter was discharged.

On the 8th September, I was sent for to Mrs. F., the mother of this child, a strong healthy woman, æt. forty-five, and nearly at the full period of pregnancy. I found the glands at the angle of the jaw slightly swollen, and some erysipelas spreading from over them to the ear. The treatment instituted had no effect. On the morning of the 10th, however, labour commenced, and the erysipelas entirely disappeared during its progress. The infant was born in the course of the afternoon, having its face and forehead completely covered with erysipelas. After two days the erysipelas disappeared; but again, a week afterwards, it commenced at the vagina, and gradually spreading over the abdomen, carried off the child in a short time. On returning to see the mother on the morning after her delivery, I found that the erysipelas had again returned with violence, over the whole face, which was very much swollen. There was no symptom of peritoneal inflammation. I immediately put her under a course of mercury, ordered a laxative draught, and hot fomentations to the erysipelatos parts, &c. &c. The fever continued severe for a few days, but she ultimately did well.

The midwife, who, on the 10th September, attended Mrs. F., was called on the following day to wait upon a servant girl, who had come to her father's house to be confined. A healthy child was born. The mother continued to do well till the fifth day, when she had a fit of shivering, was seized with pain in the head, and became feverish. Subsequently, she became affected with most violent diarrhoea, from which she ultimately recovered.

The father of this girl, an infirm old man, watched over her anxiously for three days of her illness, when he himself was seized with a fit of shivering, and became feverish. He complained much of pain in the throat, and difficulty of swallowing. The fauces and palate were of a deep red colour, and there was considerable swelling at the right side. Next day the right parotid gland was much swollen, and an erythematous blush appeared over it, which gradually increased to erysipelas of the whole face. The accompanying fever was of a low type, and in spite of the assiduous administration of stimulants, the poor man sunk on the ninth day of the attack.

Another daughter of this man, who had been in constant attendance on him and her sister, was seized with erysipelas, commencing at the ankle, and spread-

ing upwards as far as the knee. Under some simple treatment she rapidly recovered.

The midwife, who had been in attendance on the two cases of labour just related, was, on the 16th September, herself seized with shivering, and the right arm became painful and very tumid. On the third day the glands in the axilla were much swollen up and inflamed. Leeches and hot fomentations were applied, and gave considerable relief; but an abscess formed and was opened. She soon recovered.

In the end of September, the nurse who took care of Mrs. F. after the midwife had left her, was taken ill on the third day after Mrs. F.'s confinement. She was seized with shivering and pain in the middle finger; afterwards, on visiting her, I found the veins of the forearm inflamed, the course of each vessel being traceable by a deep red line. After a short time violent erysipelas commenced at the hand, and extended up the whole arm. Matter was formed and discharged in great quantity through deep incisions which were made in the arm. She ultimately recovered.

The woman who attended this last patient was seized with shivering and sore throat. On examination, the fauces were found of a deep red colour, and the glands much swollen, but not inflamed. The accompanying fever was of a low typhoid type. This woman also ultimately recovered.—*Monthly Journal of Medical Sciences*, March, 1850.

62. *Inflammation of the Mammæ.* By Mr. T. W. NUNN.—After a few remarks on the common modes of treatment of inflammation of the mammary gland, and their inadequacy to prevent suppuration, the author stated that he proposed the following plan. 1. To confine the patient to the horizontal position. 2. To prevent any extraneous irritation of the inflamed organ. 3. To envelop the breast with mercurial ointment spread on thin linen, and to cover this with a tepid poultice. 4. To support the gland by a suitable bandage, when the horizontal position cannot be maintained. 5. After the constitutional irritation has been allayed by a brisk purgative, effervescing salines, and proper regimen, to carefully watch the state of the pulse, and look for the proper moment for the administration of tonic medicines. 6. Wine and stimulating articles of diet should be allowed only with great caution. In the majority of cases, Mr. Nunn was of opinion that, after the first day or two, the patient needs bark and ammonia, quinine and iron, rather than depletive drugs. The strength of the mercurial application should be adapted to the condition and natural texture of the skin covering the gland. In some instances, the unguentum hydrargyri fortius will not be found too powerful; in others, it will be necessary to dilute it with an equal proportion of ceratum resinae. A combination of the extract of belladonna, hyoseyamus, or opium, in the proportion of 3i to the 3i of ointment, will be most effectual in allaying the intense agony frequently complained of. The leading idea in treating mammary inflammation, should be the prevention of suppuration; when that cannot be avoided, the attempt should be made to render it as circumscribed as possible. Mr. Nunn opposed large incisions of mammary abscesses, and thought the practice of laying open extensive sinuses of the breast uncalled for. The tissue of the gland, he averred, should not be cut; and he quoted Dr. Gibson, of Philadelphia, to show that sinuses may be obliterated by pressure. The importance of preserving the integrity of the gland, he (Mr. Nunn) observed, cannot be overrated. He related several cases in illustration of his position.

CASE 1. A young woman, aged twenty-two, who had been confined with her second child about a month, applied to Mr. Nunn, with her breast in a state of intense inflammation. She had been applying poultices and hot fomentations for two or three days, without any relief. Her tongue was white; bowels confined; much thirst; pulse rapid, but weak; skin moist. She was ordered a saline aperient of magnesia, and a drachm of decoction of cinchona twice a day; also to have mercurial ointment, diluted with resin cerate, applied to the breast. In ten days, the redness, heat, and swelling, had much diminished, and the constitutional symptoms were improved. The ointment gave great ease, and had enabled her to sleep; it had not produced any unpleasant effects.

She was ordered to apply the ointment more sparingly, and to take quinine and porter. In a few weeks, the disappearance of some hardening which had remained indicated a satisfactory termination of the case.

Case 2. M. R., aged thirty-nine, had chronic inflammation of the right breast, for which she had been subjected to a variety of treatment. The swelling was principally confined to the lower half of the organ; there was little redness, but much tenderness. Mr. Nunn ordered mercurial ointment, with a drachm of opium to the ounce, to be rubbed in, and the patient to take ammonia, with cinchona and conium. The ointment gave rapid relief, and the patient soon recovered.

Case 3. M. M., aged twenty-one, applied to Mr. Nunn, about six weeks after delivery, with an acutely inflamed breast. The mercurial application was ordered. She neglected to report herself at the time appointed, but applied the ointment for a week. The system became affected, but no actual mischief appeared to have been done. This was the only case in which the mercurial application had effected more than was desirable; and though suggesting caution in its employment, Mr. Nunn did not consider that it formed an objection.

Case 4. M. A., aged forty, had mammary abscess, which had been treated by poultices, etc. It had burst, and left a circular ulceration of the size of half-a-crown. The granulations on the surface of the gland were weak and flabby, and covered with a copious secretion of pale pus. Mr. Nunn discovered a large flat sinus, extending a considerable distance beyond the margin of the ulcer; the discharge from it was very abundant, and depressing to the patient. The poultices were discontinued; bark and ammonia were administered, with a more generous diet. The sinus healed without the necessity of laying it open, and the patient was restored to health.

The author pointed out the importance of attending to the peculiar relation in which the mammary gland stands to the economy, and to the effects produced by inflammation of the trabecular and of the secreting structures. It is important to the mother, as well as to the child, that the integrity of the organ should be maintained. Mercury, in virtue of its efficacy in checking the tendency of blood to deposit fibrin, and of its property of causing the reabsorption of effused lymph, seems to be strongly indicated in the disease under consideration. Its benefit is obvious, when we reflect that by the formation of an abscess in the substance of the gland, the ducts are destroyed, and the portion of the gland becomes isolated. For a time, it may give no inconvenience; but, under the excitement of lactation, it may become the seat of a fresh attack of inflammation. This, Mr. Nunn observed, must have been met with by every practitioner of experience. In conclusion, Mr. Nunn said that he would not be understood to advocate the use of mercury in all cases of mammary irritation, but he believed the plan he had recommended likely to prove of great service.

Mr. I. B. Brown said, that one great cause of inflammation of the breast was, the not applying the child to the breast early enough. This cannot be done too soon after delivery. Stagnation of the milk in the breast acts as an irritant, and causes inflammation. It can be overcome by general remedies—the horizontal position, keeping the breast supported, causing the skin to act, and by warm-water dressing. He objected to drastic purges. Parturient women cannot bear to be lowered, and ought not to be subjected to the depressing action of mercury. Mammary inflammation was often caused by keeping the patients on gruel, when they required an improved diet. The excess of fluid was bad. Most patients subject to inflammation of the breast were of the strumous diathesis, and could not bear mercury, which would deteriorate their milk and injure their offspring. Mercurial ointment might be useful in chronic mammary inflammation, but it could not be used with safety, he thought, in an acute attack.

Dr. MURPHY said that no one plan of treatment could be followed as the best in all cases of inflammation of the mammæ. Mammary abscess might be sthenic or asthenic. In strong, healthy young women, where the milk, from some cause, was not withdrawn, he was satisfied that, if proper antiphlogistic measures were adopted, there would be no reason to fear abscesses forming. He advised the combination of tartar emetic with the neutral salines. The feelings

of the patient should be consulted as to the use of warm or cold applications. In weak and irritable women, if purgatives and tartar emetic were used, the irritation would be increased, and abscess after abscess would form. Such patients require tonics and support. If, on the other hand, a robust, plethoric woman be placed on full diet, after parturition, mammary abscess will be very apt to occur.

Dr. MANSON stated that at the General Lying-in-Hospital it had been the custom for the last twenty years, when the breast became hard and knotty after parturition, to rub in freely the linimentum ammoniæ, as a preventive of suppuration; and so successful had this practice been, that they had scarcely ever had a case of mammary abscess.* The liniment is rubbed in for ten minutes or a quarter of an hour, until the breast becomes soft and supple. He thought it acted as an emollient and evaporating lotion, while the stimulant quality of the ammonia was evidenced in the reduction of the quantity of the milk. When the inflammation is so severe that friction with the liniment cannot be used, he thought the mercurial ointment might be tried, with a poultice over it. In a very severe case, chloroform was given before friction was used, and successfully; the patient recovered without suppuration.—*London Journal of Medicine*, March, 1850.

[We have for many years employed fomentations with vinegar and water, as recommended by Dr. Dewees, followed by gentle friction with olive oil or camphorated oil, and have found it a perfectly successful mode of treating inflammation of the mammary gland.—EDITOR.]

63. *Diagnosis between Real and Apparent Death in Newly-born Children.*—It is well known how difficult it is to determine whether a child born in a state of asphyxia be really dead. If the pulse be not perceptible, if respiration be absent, and if the beating of the heart be not heard, it is sufficient to lead most accoucheurs to decide that the child is born dead, and to decline making any attempt at artificial respiration—too probably fruitless. It would be important to possess a certain sign that life still existed, even though all its functions had apparently ceased. M. VAN HENGEL thinks he has discovered such a sign.

In May, 1848, he administered ergot of rye to a patient labouring under hemorrhage. The hemorrhage was arrested; but the infant was born apparently dead. There was no respiration; the hot bath was first tried, then alternate immersion in hot and cold water. Tickling of the nostrils also produced no result. M. Van Hengel thought of stimulating the sacral nerves by means of a stimulant enema. Having no syringe at hand, he took in his mouth a mixture of brandy and cold water, and blew it into the anus through a pipe. He then removed the pipe, and retained the liquid in the rectum for a few seconds by means of his finger. Three or four seconds after he removed it, the liquid was forcibly ejected, mixed with meconium. This experiment made such an impression on the parents, that though they had previously thought it unnecessary to have the child baptized, they now had that ceremony performed without delay. It was not possible to further reanimate the child; and a mixture of brandy and water injected half an hour after flowed out immediately.

In subsequent experiments on the dead body, the liquid either returned immediately, or remained in the interior. M. Van Hengel hence thought himself authorized to suppose that by the use of the stimulant injection, the nerves of the rectum had been acted on so as to produce expulsive action; and that this denoted *that life still remained*.

It might, however, be objected that the expulsion of the enema was due to the contractile power of the intestines remaining some time after death; and that, to give any importance to the sign adduced by the author, it would be necessary to perfectly resuscitate a child, in which this sign alone denoted the existence of life. M. Van Hengel has had the good fortune to do this; and the following case will be read with interest.

CASE. Madame B. was delivered of a female child, by the natural efforts,

* A more common, and, so far as our experience goes, an equally successful method, is frequent gentle friction with warm olive or other bland oil.—EDITOR.

after a labour of two hours, during which symptoms produced by shortness of the umbilical chord were perceived. This was twisted round the neck of the child, and pulsated very feebly; the infant did not cry; the skin was bluish, and the limbs tolerably firm. The cord was immediately cut, and about a teaspoonful of blood expressed from it; the child was placed in a warm bath, after which a little more blood flowed. M. Van Hengel then injected an enema of brandy and water; this was ejected in three minutes, in an arch form, with meconium. The infant was baptized; and air was blown into the mouth, the nostrils remaining open. This was done very cautiously at first, but soon with more force, and with the mouth of the operator applied to that of the infant. After a little time, the thorax dilated; pressure was now made on the ribs, and it was thought that the infant performed a share of the movements thereby produced. This operation was continued for three-quarters of an hour. Alternate hot and cold baths were again tried; a spasmodic respiration seemed to set in, but at long intervals. As this diminished in intensity, an attempt was made to produce vomiting, so as to cause a deep inspiration, by tickling the palate and tonsils with a feather. The desired result was obtained; the infant made a deep inspiration, but without crying; and it was necessary to press the abdomen and thorax to produce expiration. On endeavouring to repeat the experiment, the mouth was found spasmodically closed, and it was necessary to introduce the feather into the nostrils. This induced a tendency to sneezing; and a strong expiration took place. This circumstance suggested a means of producing, at pleasure, inspiration and expiration.

The barbs of a feather were cut, so as to leave them about three centimètres long at the end; the stem was then stripped off them for four or five centimètres, and beyond this they were left. On introducing the feather into the nose, the tickling of the nostril produced an effort at sneezing, and consequently an expiration; when the feather was carried as far as the velum palati, there was an attempt at vomiting, and consequently an inspiration; when it was carried still further inwards, the last barbs of the feather tickled the nostril, while the others only provoked an effort at deglutition. By alternately introducing and withdrawing the feather, efforts of inspiration and expiration were produced in succession. This process was continued for half an hour.

At the end of this time, the operation was suspended, because the infant lost some blood by the nose. The object, however, had been gained; the child was alive, and cried. The next day, a teaspoonful of syrup of marsh-mallows was administered to it. Everything went on well; and the child continues to enjoy health.

Such a fact as this is sufficiently important to call for a series of analogous experiments on a large scale. Practitioners should especially not lose sight of the ingenious means employed by M. Van Hengel to promote a kind of respiration at once natural and artificial, which may be substituted, at least at first, for the always difficult process of insufflation.—*London Journ. Med.*, Feb., 1850.

64. *Discussion in the French Academy of Medicine upon Engorgements of the Uterus.*—The presentation of a report, in October, by M. Hervez de Chégoin, upon a memoir upon “Deviations and Engorgements of the Uterus,” forwarded to the Academy by M. Baud, has given rise to a more animated and prolonged discussion than has recently occurred in that body. This has been remarkable, not only from the great diversity of opinion prevailing among equally high authorities, and that on matters apparently capable of physical demonstration, but also from having brought into the field some eminent men (as Paul Dubois, Jobert, Recamier), who very rarely take part in the discussions at the Academy. To our view, the discussion is also of importance as promulgating a recantation of a dangerous medical heresy. How short is the period since, when under the influence of Lisfranc’s views, half the women of Paris were condemned to absolute recumbency, debilitating depletion and regimen, and in many instances to cruel operations, under the belief they were suffering from inflammatory affections of the uterus, tending in numbers of cases to cancerous degeneration! Whatever the difference of opinions offered in the present discussion, however opposite these may be, all now unite in repudiating as untrue in fact, and

dangerous in practice, the doctrines received so short a time since with such confidence, and acted upon with such dangerous vigour. In this country they were received with little favour; and the remembrance of their extravagance, and of their discomfiture in their natal soil, may account for the distrust which is now felt at the attempts recently made to instal ulceration and other affections of the cervix uteri as the dominant cause of female ailments.

Of a discussion that has occupied so many sittings, we can only profess to furnish an outline, reserving all appreciation and criticisms of the opinions advanced for future consideration in another department of the journal, as opportunity may offer.

M. Baud regards the diseases of the uterus from an exactly opposite point of view to that taken by Lisfranc, believing that both they and the deviations of the organ from its normal position are for the most part due to a disordered state of the general economy, in which the uterus participates, and on the relief of which these secondary and passive effects disappear. He concludes: 1. That all treatment which ameliorates the general condition is a step towards the cure. 2. Treatment ameliorating the local condition, to the detriment of the general, aggravates the disease. 3. Treatment should be adopted under the idea that the uterus is in a passive and mechanical condition. The remedies he recommends to carry out these views are of a tonic and corroborant kind, whether locally applied or given internally.

M. Hervez de Chégoin, reporting on this paper, while regarding the opinions advanced in it as too exclusive, yet states his belief that the local uterine affections are most aptly treated by general means, and that the *engorgements* observed in displacements of the uterus are often only the results of these, and disappear when the latter have been rectified. While he blames Lisfranc's indiscriminate treatment, he cannot admit that inflammatory *engorgements* requiring leeches may not sometimes exist; while, moreover, local *engorgements* may occur quite independently of a disorder of the health, the woman being otherwise quite well. In passive *engorgement*, too, dependent upon displacement, all internal treatment is useless without mechanical aid, which indeed M. Baud admits is then also sometimes required. M. Baud also attributes leucorrhœa to general debility, calling for tonics and astringents; but while it may be admitted that a tonic treatment best accords in general, there are other cases in which the mildest procedures are alone admissible. Every one has seen examples of obstinate yellow discharges, with a tendency to constriction of the vagina, and the production of painful fissures; which, though indolent as long as no physical cause of irritation exists, are exasperated by all tonic and astringent applications, and yield only to the mildest, of which distilled water forms one of the best. In other cases, in which there is an altered, thickened, or granular state of the lining membrane, neither tonics, nor emollients, nor any internal treatment are of avail, until the condition of this be changed by special applications. Leucorrhœa, too, resulting from uterine neuralgia, calls also for its special treatment.

M. Gibert: While practitioners of the olden times regarded the uterus as a kind of critical and depuratory emunctory, whose lesions depended in general upon a general diathesis, those of more modern times have been too much accustomed to make it the point of departure for the most varied and most serious general accidents, counselling for what were most trifling ailments the most active procedures, and leading those who had little the matter with them to believe themselves dangerously ill. Such alarming statements, in fact, were the means of generating in those to whom they were addressed a series of general symptoms, pains, and disturbances of function, attributed to the disease, but which disappeared when these persons were subjected to a more rational treatment, and their minds tranquillized. A large hospital practice, in which constant examinations of the organs have been made, enables M. Gibert to assert: 1. That the alterations in colour, form, volume, texture, and situation of the neck of the uterus, signalized by so many surgeons as the point of departure and origin of such varied morbid phenomena, may be discovered without their having given rise to any of the ill consequences so frequently attributed to them; and, 2. The various symptoms, signalized by

Lisfranc as the necessary accompaniments of engorgement, may occur without any sensible alteration in the cervix being discernible. Believing, however, in the existence of such a disease as *engorgement* of the cervix, he regards it as almost always an effect of a lymphatic diathesis, and one of the consequences of delivery.

M. Velpeau excited numerous replies by maintaining that *engorgement* of the uterus, as an affection independent of inflammation, had no existence; and although he limited this exclusion afterwards to the body of the uterus, yet even as regards the cervix, he maintained it is comparatively a rare affection, and one for which *inflexions* of the organ are frequently mistaken, these being of far more frequent occurrence than is generally believed. Lisfranc maintained that inflexions were only the consequences of engorgements; but M. Velpeau declared that, when hypertrophy exists, it is the consequence of the inflexion, and it is indeed always found on the side of such inflexion. Pessaries have been much misused; of service in simple deviation, they are of no service when the womb is infected, and the abdominal bandage is then the only thing M. Velpeau has found act as a palliative. M. Velpeau believes that neither author nor reporter attaches a sufficient importance to local remedies, although he agrees with them as to the importance of general treatment in certain cases. The white discharges from the cervix result either from carcinomatous diseases, or from the presence of granulations or vegetations in the parts, which is indeed the commonest of causes of uterine discharges, and can never be efficiently treated without local means, of which the acid nitrate of mercury is by far the best.

M. Malgaigne believes, with M. Velpeau, that many of the uterine affections are local, and call for local remedies, but he thinks that the frequency of ulceration has been exaggerated. The reporter declares *retroversion* a much more frequent deviation than *anteversion*; but M. Malgaigne, while engaged at the Bureau in the application of pessaries, could never meet a case of retroversion, though examples of anteversion were frequent; but while this discussion was going on, no less than three examples of the former came under his notice, because, as M. Dubois declared, he had proceeded with the view of searching for them. As a local application in the engorged cervix uteri, he prefers the actual cautery.

M. Moreau considers M. Velpeau's assertions far too general; for, because ignorant persons may mistake displacements for engorgement, it does not follow this may not exist. As M. Velpeau stated cadaveric proofs were wanting, he would cite an example on the living; for, a uterus having been removed on supposition of carcinoma, its body was found simply engorged. *Engorgement* of the cervix is of far more frequent occurrence. Contrary to M. Malgaigne, he believes that anteversion is very rare, and retroversion of the non-pregnant uterus is far more frequent.

M. Jobert considers that *engorgement* of the uterus may exist either as symptomatic of other affections, or idiopathically, and in this last case demanding local applications, as its principal, if not as its sole treatment; and it is here that he has found the actual cautery so valuable. Deviations of the uterus may be either congenital or acquired. In the first, the uterus undergoes a change in its proper texture, an atrophy or imperfection of development occurring in the direction of its curve. Such changes in form may produce no accidents until puberty, and none at all unless menstruation is impeded by them. These congenital deviations are irremediable by art; and while those arising accidentally may be remedied, they cannot be so by local means alone, dependent as they are upon an altered condition of the tissues, which must be restored to their normal state, mechanical means being used only as auxiliaries.

M. Robert entered into a long dissertation to show that the symptoms attributed to *engorgement* were really due to a granular state of the lining membrane of the cavity of the uterus, long since pointed out by Recamier, and that on scraping these away (examined microscopically, they appear to be mere expansions of the proper texture of the membrane), and afterwards applying caustic, the symptoms soon yield.

M. Huguier, in answer to M. Velpeau's challenge to exhibit *engorgement* in

the dead body, observed that, as in *engorgements* of other tissues, these rapidly disappeared after death, and that he had repeatedly measured the cervix before and soon after death, and found it diminished afterwards by more than a third. Nevertheless, he exhibited preparations to the Academy, which were generally acknowledged to demonstrate the engorgement in question. Of 2527 cases of which he has kept notes, at the Lourcine and Beaujon, he finds there were 131 well-marked examples of *engorgement*; and of these, in 106 it affected the cervix alone, 8 the body and cervix, 13 the body alone, and 4 remained unindicated.

M. Roux observed that *engorgement* may be affirmed from analogy and pathological anatomy. Thus, when we see the orifices of the mucous canals, the amygdalæ, spleen, liver, &c., liable to become engorged, it would be strange if an organ like the uterus, having abundance of vessels, and a periodical flux, and fulfilling functions often giving rise to irritation, should be exempt. Twice M. Roux had been induced to extirpate the uterus; in the one case cancer was far advanced, and hoping in the other to remove the organ in an earlier stage, it was found quite unaffected with organic disease, being simply engorged. A member inquired "What became of the patient?" M. Roux's solemn reply "obiit," coupled with the assurance that no consideration would induce him to undertake again this operation, ought to have conveyed a wholesome lesson to his younger auditors.

M. Hervez de Chégoin observed that *anteversions* are of more frequent occurrence than *retroversions*, because the latter require in general a peculiar excavation of the sacrum for their production; but they give rise to less inconvenience than retroversions, being but an exaggeration of the natural position of the womb.

M. Amussat believes that, while Lisfranc much exaggerated the frequency of *engorgement*, it would be a great error to deny its existence, or attribute it entirely to the operation of deviations, as also to refuse to admit that the affections of the uterus may exert a great effect on the system at large. In treating *engorgement*, if general measures are found insufficient, we must also resort to local ones, and not wait too long before we do so. Cauterization, if perseveringly used, is an excellent means, and even may be of avail in *cancerous* disease; for this is more amenable here than in the breast, and less liable to relapse. He prefers the solidified potass and lime to the actual cautery, but recommends it to be freely applied. He believes that both anteversion and retroversion occur more frequently than is allowed, and the one perhaps as often as the other, although retroversion, by its greater importance, has attracted more attention. He has succeeded in curing some cases by cauterizing the posterior surface of the cervix, and getting this to adhere to the opposite wall of the vagina.

M. Recamier, the originator of the modern pathology of uterine disease, delivered a discourse tending to demonstrate the reality of uterine engorgement, which he regarded of an erectile nature, exactly analogous to erectile engorgements about the rectum.

M. Paul Dubois delivered a most able address upon the subject, reviewing the opinions of the former speakers, and communicating his own in a most lucid manner. The length of his address, and the importance of the numerous facts and observations it contains, oblige us to defer our analysis of it until our next number.—*British and Foreign Medico-Chirurgical Review*, April, 1850, and *Gazette Médicale*, 1849, Nos. 41–47; and 1850, Nos. 3–5.

65. *On the alleged frequency of Ulceration of the Os and Cervix Uteri*.—*Speculum Practice*.—DR. TYLER SMITH read a valuable practical paper on this subject, before the Westminster Medical Society, April 6th, 1850. This paper has since been published (*Lancet*, April 20th), and from this publication we make the following abstract:—

MR. WHITEHEAD, of Manchester, in his work on "Abortion and Sterility," states that, of 2000 women whose cases he investigated on their application to the Manchester Lying-in Hospital, "1116 had the whites at the time the inquiry was made, and a considerable number more had suffered under a similar ailment at some former period. In 936, or eighty-three per cent., the discharge bore

undoubted evidence of the presence of pus, or of sanies; and in some instances it was more or less mixed with blood." Mr. Whitehead traces these discharges to "disease of the lower part of the uterus, this disease being found to exist in almost every instance;" and he further declares that "this lesion of structure constitutes the true pathological seat of leucorrhœa, and of all its associated phenomena." Dr. Henry Bennet states, in his recent work on "Inflammation of the uterus and its appendages, and on ulceration and induration of the neck of the uterus," that of 300 cases presenting "uterine symptoms," among the patients of the Western dispensary, he found that "243 were suffering from decided inflammatory disease of the cervix or its cavity; and that in 222 ulceration was present." Thus in Mr. Whitehead's cases, in 936 out of 1116 cases of leucorrhœa, the discharge was purulent or ulcerative; and in Dr. Henry Bennet's cases, 222 out of 300 or more than two-thirds, were also suffering from uterine ulceration. Dr. Bennet states that the same proportions are preserved in the cases he has treated in private practice.

It is well known that this is widely at variance with the experience of previous observers in this country. Does this discrepancy arise from the superior modes of investigation adopted by the authors I have quoted, or does it happen from some misapprehension as to what really constitutes ulceration of the os and cervix uteri? Is there simply some mistake about the nature of ulceration, or is the difference explained by the more general use of the speculum?

Practising as a physician-accoucheur, I must get the same class of patients as those treated by Mr. Whitehead and by Dr. Bennet. I am in the habit of using the speculum in cases of obstinate leucorrhœa in married females, and I trust with a desire to observe truly and faithfully, but I do not myself find uterine ulceration—at least not what seems to me to warrant this term—so frequently as Dr. Bennet, Mr. Whitehead, and some other gentlemen who have written upon the subject, in leucorrhœal cases, purulent or muco-purulent. I find inflammation, engorgement, induration, excoriation, patches of aphthæ, epithelial abrasion, and granulation often enough, but very seldom what I could call ulceration, in non-malignant and non-syphilitic cases.

After giving a quotation from Dr. Bennet's description of ulceration, Dr. Smith says:—

If we consider excoriation or abrasion as genuine ulceration, probably no woman ever passes through life without suffering from this form of disease. In the virgin uterus, the circulation is frequently modified by the recurrence of menstruation, ovarian irritation, mental emotion, the varying condition of the bladder and rectum; and in constitutional ailments, the vaginal and uterine secretions, in common with the other secretions of the body, are frequently depraved. Excoriation and abrasion of the mucous membranes are easily accounted for under such circumstances. Menstruation alone in the turgidity of the uterus and ovary, before the catamenial flow is established; in the exudation of blood from the surface of the uterus; and in the perforation of the peritoneal membrane for the elimination of the ovule from the ovary, trenches very nearly upon pathology. The slightest divergence from the ordinary function merges into disease.

In married women, and those who have borne children, other prejudicial causes in addition to these are in operation: such are the mechanical irritation of coitus, the risk of lacerations of the os uteri during the passage of the child in parturition, and the state of the uterine orifice which obtains after labour, and the return of the organ to quiescence. After labour, the orifice of the uterus does not contract smoothly, so as to leave the os uteri regular and even, but it becomes puckered and contracted unevenly. In irritable conditions of the mucous membrane of the uterus and vagina, or in a morbid state of the utero-vaginal secretions, these folds or corrugations are very liable to be chapped or excoriated, and I believe this is often mistaken for ulceration. All these, and other causes which I might enumerate, explain the frequency with which the os uteri deviates in colour, volume, and secretion, from the strictly healthy standard. In fact, we may compare the upper part of the vagina to the fauces, which is seldom found perfectly healthy in any subject who may be examined. Some of the indurations and enlargements of the os and cervix uteri appear to

resemble enlarged tonsils, and like them to increase in size without any amount of active inflammation.

The granulations which are sometimes found surrounding the os uteri—which may secrete mucus or pus abundantly, and which may bleed on being roughly handled—are, I have no doubt, the result of inflammation; but they resemble *the granular state of the conjunctiva*, rather than the granulations of a true ulcer, the granular os uteri offering no edges or signs of solution of continuity by which we might satisfactorily declare it to be an ulcer. The *granular os uteri* would be a more correct designation in such cases than “ulceration” of the os uteri. Some of the so-called ulcerations appear to be nothing more than patches of thickened epithelium or portions of the os and cervix, from which the epithelium has been removed by acrid or irritating secretions. We can imitate this condition of the parts by the slight application of the nitrate of silver—sufficient to affect the epithelial covering, but not sufficient to injure the mucous membrane beneath.

It appears to me that we can neither receive the existence of excoriation or abrasion, of granulation or fungous growths, the secretion of pus or muco-purulent matter, as affording undeniable evidence of the existence of “ulceration” of the os and cervix uteri. We must try ulceration in this part of the body by the same tests which we apply to ulcers in other parts of the economy. We must look for a solution of continuity, with a secreting surface, separated from the healthy structures, having defined edges, everted or inverted, for an ulcer. In fact, in the common pathological meaning of the term, we find ulcers having these characters in the air-passages, mouth, stomach, intestines, bladder, and other mucous surfaces. There is no mistaking the characters of an intestinal ulcer after dysentery, and there ought to be no mistake about an ulcer of the uterus. Indeed, in the corroding ulcer of the uterus we unfortunately see that this organ is but too capable of taking on all the qualities of ulceration, in a degree only equalled by its extraordinary vitality, the organ being scooped out, or eaten away in a comparatively short space of time. Cases are also met with in which the os uteri has been destroyed by the sloughing ulceration and loss of structure, sometimes following the application of the more powerful caustic agents. We are, however, called upon by the unlimited believers in uterine ulceration to admit that ulcerative disease may exist for years in its common form without any perforation, excoriation, serious loss of substance, or altered configuration. Whether we test the so-called ulceration of the uterus by ulceration occurring in other mucous surfaces, or in the uterus itself under undoubtedly ulcerative disease, the distinctive characteristics are wanting in the great majority of cases; and they certainly are not found, unless I am most egregiously mistaken in the enormous proportion of 222 cases of ulceration to 300 cases of promiscuous uterine disease.

In all that I have said, I do not wish it to be supposed that I question the frequency of irritation, chronic inflammation, and subacute inflammation in connection with leucorrhœa. Recent writers would, however, treat leucorrhœa merely and solely as a symptom, not as an independent disorder. But I am well assured that it is often the disease itself, or at least all of it that we can appreciate; and that the irritable or inflammatory condition is excited secondarily and mainly by the morbid leucorrhœal secretion. Some change in the innervation or nutrition of the organ occurs, or it sympathizes with a malady in some remote organ, and the secretions are consequently depraved. These depraved secretions irritate the surfaces with which they come in contact, and produce the visible signs of irritation or inflammatory action. We see these discharges sometimes inflame and excoriate even the external integument, but we should never dream of saying that the inflamed condition of the skin was the essential part of the disorder. The same observation applies to the uterus. Thus it is not pathological nor useful always to consider leucorrhœa as a mere symptom; and the old plan of astringent injections, though sometimes mischievous, cannot quite be dispensed with; for in some, even profuse leucorrhœas, an astringent injection by arresting the utero-vaginal discharges, does more than any other plan to soothe inflammatory conditions, or rather to suspend their causes.

Notwithstanding the use of the speculum—notwithstanding the use of lamps and glasses, there is often considerable difficulty in ascertaining the precise condition of the cavity of the uterine cervix, engorged as it is, and deep in colour from irritation or other disease, and from the interruption to the circulation in the uterine organs, which is almost necessarily dependent on the introduction and expansion of the speculum within the vagina. But in the dead subject no such difficulties exist; and it might certainly be expected, since leucorrhœa is a malady so very common, that uterine ulceration would be frequently revealed by post-mortem examinations. The only place in which, so far as I am aware, post-mortem examinations have been conducted in considerable numbers, with special reference to the determination of the frequency or infrequency of ulceration of the os and cervix uteri, is at St. George's Hospital. For several years past, the condition of the uterus has been examined with great minuteness and accuracy in the dead subject at this hospital.

Mr. Pollock, one of the lecturers on anatomy at St. George's Hospital, informs me that for more than three years, during which he was curator to the hospital museum, he examined the uterus internally and externally in all the subjects in the dead-house. During this time upwards of one hundred women died in the hospital annually. In each case the uterus was laid open and carefully inspected. Mr. Pollock only detected actual and unmistakable ulceration *in four cases*. Of these, three were scrofulous subjects, and scrofulous ulceration existed in other parts of the body; and in one of them the ulceration involved the vagina extensively as well as the os uteri.

Mr. Gray, who succeeded Mr. Pollock as curator, informs me that during his curatorship he examined the bodies of one hundred and eighty women, who had died of all diseases in St. George's Hospital, with a distinct view to ascertain the proportion of cases in which ulceration of the uterus existed. These examinations were also conducted with great care and minuteness. Out of the one hundred and eighty subjects, distinct ulceration of the os and cervix was found in only *three* instances. Slight abrasions, discolourations, and granulations were frequently observed; and this accords with the observations of Mr. Pollock. One or two other curators to St. George's Hospital, besides Mr. Pollock and Mr. Gray have arrived at the same results. It is only by pathological investigations of this kind that we can arrive at infallible results.

But it may be asked, why bestow so much pains on proving that abrasion, excoriation, and ulceration are not *ulceration*? Why dispute as to terms? Simply because a name rules treatment, and because the name of "ulceration" being first given, an heroic treatment not without danger is frequently resorted to, where milder local applications or constitutional treatment would be equally efficacious. After Mr. Abernethy wrote his celebrated work on the Constitutional Treatment of Local Disease, his idea was pushed to its extreme, and local remedies were often most improperly neglected. Now, in all that relates to the uterine organs, the doctrines of Mr. Abernethy are in danger of being entirely refuted, and we are in some risk of utterly neglecting constitutional treatment, and of being entirely absorbed by local applications. This we cannot do without impeding the improvement of the treatment of this class of affections. When a patient is told she has an ulceration of the womb, she often thinks of an ulcer of the leg or the cheek, &c., and is proportionably frightened, because of the importance of the organ which is the seat of the presumed disease. There is nothing women will not submit to to be freed from such a dire malady. At the present time a veritable uterine panic affects the upper and middle classes of society, and every woman with the slightest ache or discharge is not satisfied until the peccant organ has been ocularly inspected. I do not believe that this state of things or its inevitable results will conduce to the dignity and respectability of our profession. I do not hesitate to affirm, so far as I have eyes to observe and a judgment to weigh facts, that much exaggeration prevails respecting the frequency of this same ulceration of the os and cervix uteri—an exaggeration which should be calmed, so that the legitimate methods of examination may lead, not to a suspicion of our profession, but to real improvement in the diagnosis and treatment of uterine disease as it actually exists. We cannot safely repudiate either the local or the constitutional treatment of uterine dis-

ease. I have seen cases in which the local ailments have been as far as possible cured; nevertheless, the constitutional symptoms remained unrelieved. I have seen others, in which judicious constitutional treatment has cured the local malady without any topical treatment whatever. But in the combat against disease, we require both constitutional and local weapons; and any views which disparage either the one or the other must cripple the resources of our art.—*London Med. Gazette*, April 26th, 1850.

66. *Condition of the Ovaries and Uterus, observed in a young woman assassinated shortly after Menstruation.*—The researches of MM. Pouchet, Bischoff, and others, have placed beyond a doubt the spontaneous detachment of ovula during menstruation. The following case, recorded by Dr. JANZER, in the *Medicinische Annalen*, vol. xiii. part 4, is an additional proof; it moreover illustrates the changes which the mucous membrane of the uterus undergoes during the menstrual period.

CASE.—The young girl who was the subject of the observation had menstruated four days before being murdered. She had never been pregnant. The autopsy was made sixteen hours after death. The surface of the left ovary presented a deep red spot, surrounded by finely injected vessels. This spot was formed by a small globular mass, imbedded in the ovary, and of an intense red through its whole thickness. The mass in question was separated from the tissue of the ovary by a thin yellow envelop, and was composed of fibres like those of areolar tissue, arranged in superimposed layers. The yellow envelop was formed by the same kind of fibres, among which there was a pretty considerable quantity of fat, not contained in cells. Near this body, there was seen a small yellow, spherical, modulated mass, composed of areolar tissue and fat. The right ovary contained two yellow bodies. The Fallopian tubes, which did not embrace the ovaries, were tumefied in the upper thirds. On slight pressure, a white matter issued from them, resembling pus, and entirely composed of round epithelial cells, some of which were furnished with vibratile cilia. No ovule, nor any traces of spermatozoa were found.

The uterine mucous membrane, between the body and the neck, was much swollen. In the uterus itself, it formed a velvety membrane, glossy and brilliant, easily detached with the handle of the scalpel, and presenting a fine network of vessels. This mucous membrane was evidently thickened; it was composed of the uterine glands, ranged perpendicularly alongside each other, and fitted with cylinder epithelium, not ciliated. The structure between the uterine glands was composed of a network of delicate fibres, of some nucleated cellular fibres, and of amorphous tissue. The surface of the uterus was covered with a thin layer of mucus, and lined with cylindrical epithelium, without cilia. The orifices of the Fallopian tubes were open. The vaginal mucous membrane was pale, but was only covered with a thin layer of mucus, containing epithelial cells.

It results from this observation that the mucous membrane of the uterus presents, during menstruation, characters analogous to those which exist during gestation; such as the hypertrophy of the uterine follicles, and the disappearance of vibratile cilia.—*London Journal of Medicine*, April, 1850, from *Gazette Médicale de Paris*, 23d March, 1850.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Microscopic Examination of the Discharges from the Bowels in Cholera.

DR. R. S. HOLMES, of St. Louis, writes to us:—

I have examined (microscopically) the discharges from the bowels in six cases of cholera, and have found the cells of cryptogami in a greater or less degree in four of these cases, and *vibriones* very abundantly in one. The theory I think amounts to nothing. I have found in flour *every one* of the forms of cryptogami that I have been able to discover in cholera cells; one has a peculiar shape, which I have not seen described. I have had a bottle of flour and water on my table for some months, and I am confident I could show in the course of a few days every one of the forms of vegetable growth in it that are seen in cholera discharges, by a Ross one-eighth lens: I say in a few days, for these cells vary in the flour, and are sometimes not to be seen; the cell of the mould of flour precisely resembles that of the smallest of the cholera cells, which is not more than the $\frac{1}{128000}$ th of an inch in diameter, although the peculiar *cholera cell*, so called, seems to have been limited by the English investigators to a much larger cell, with buds upon it.

I may mention that I discovered distinct crystals, having the exact forms of those of lithic acid, in one case where there was suppression of urine.

Compound Fracture of the Skull with Laceration of the Meninges of the Brain successfully treated by the application of the trephine eleven days after the injury. By J. M. HURT, M. D., Nottoway City, Va.—On the night of the 5th of July, 1849, William —, æt 24, uncommonly athletic and stout, and a ditcher by occupation, in an altercation with a fellow ditcher was felled to the ground by a blow, with the corner next the handle of an old half-worn spade, over the superior posterior angle of the left parietal bone near the sagittal suture; the weapon perforated both the integuments and bone to the exact thickness of its blade, and in length varying from three-fourths of an inch to an inch, producing, according to the report of the bystanders, which was quite vague, strongly marked *symptoms* of concussion, attended by slight extravasation. How long he remained insensible, or whether there was a decided interval between the blow and the consequent insensibility, they either failed to observe or remember, thereby leaving me to conjecture the existence of a fact important to be known in making up a correct diagnosis. I saw him about 10 A. M., on the 6th, lying where he had been stricken down the evening before. He was then rational enough to give a particular account of the difficulty, and seemed indignant and belligerent. There was immobility of the right arm, rigidity of the right leg, and amaurosis of the *left* eye. There was no loss at any time of its history of sensation in the affected part.

He was taken to my infirmary and the wound examined minutely, both by the eye and with a probe, which resulted in the discovery of a smooth, clean-

cut wound of the dimensions before mentioned; the hair was matted and full of coagulated blood, as if there had been considerable hemorrhage. With a probe the aperture in the skull could be detected, but no spiculæ or radiating fissure could be discovered, and as the paralytic symptoms were not urgent, it was thought advisable to postpone other manipulation, place him under a strict antiphlogistic treatment consisting of tart. emet., venesection, low diet, with entire quiescence of body and mind, and watch the after developments as affording the best clue to the exact nature of the injury and the most rational practice. Under this treatment he so much improved as to move, by the assistance of a cane, moderately out of doors; slight headache with slight exacerbations of fever being the principal inconvenience. On the 14th a decided change for the worse was observed, so that walking became nearly impracticable; his intellect was however undisturbed up to the night of the 15th, when I found it under great excitement; he would pray and laugh boisterously by turns; the organ of veneration seemed stimulated to a morbid degree of activity, but he gave in a religious experience connectedly and rationally. On the morning of the 16th I was summoned to him in haste by his attendants, who said he seemed dying with a fit; he was said to have been in his right mind up to the moment of the seizure. I found him suffering with a violent epileptic fit, which convulsed the whole right side of the body, and produced such violent spasmodic twitches of the muscles of the face as greatly to distort the features. He remained speechless and insensible during the continuance of the fit, which lasted for one and a half hours. I immediately ripped open the wound, which had partly united, and from which about a teaspoonful of matter escaped.

All other remedies having now failed, I determined to resort to the use of the trephine—as what I think it should ever be regarded—a dernier remedy. On the evening of the 16th, with the kind and valuable assistance of my friends Dr. George Hardy and Sterling Niblitt, I commenced the operation, first, by enlarging the longitudinal wound, which had partly united by first intention, and at the top of this made a deep incision at right angles, thereby forming the letter T. Enough of the flaps were then dissected up to admit the crown of the instrument, and the other parts of the operation gone through as is usually directed.

The circle of bone thus removed gave evidence of considerable splintering of the vitreous table, which was without difficulty verified by detecting a number of spiculæ, which had been driven immediately beneath the point of entrance to the spade, and buried, some of them, several lines below the surface of the brain: besides these a quantity of small, dust-like particles of bone were found lying on its surface, looking as if the inner table had been shivered like a piece of badly annealed glass. These being removed, a still larger shelf-like splinter was found buried to the depth of six or eight lines, one end floating loosely and the other firmly attached underneath, in a direction obliquely to the original fissure. The membranes of the brain were considerably lacerated, and shreds of cerebral substance to the amount of a teaspoonful detached and forced up from the lid in which it was reposing. All efforts to elevate this with forceps and elevator, owing to its size and depth, were fruitless, so that the second application of the trepan became indispensable; after which it was, however, removed without further difficulty. The loose particles of brain were removed and the wound closed by drawing the flaps firmly over a thin plate of silver fitted smoothly over the aperture to prevent cerebral hernia, and by binding them strongly together by bands of adhesive plaster.

The case being deemed unsuited to the use of anæsthetics, the operation was performed without them, which the patient stood with heroic fortitude.

Simple water dressing, low diet, entire rest, and antimonials were prescribed as the treatment. Gave a large opiate—after the operation he said he slept well. 17, Mane, pulse 80, and free from pain, arm slightly more movable. Vesp.—slight exacerbation of fever, pulse 90, slight cephalalgia—treatment rigidly antiphlogistic. From this date there seemed a general amelioration of the symptoms, but none were suddenly radically cured as the *direct* and *immediate* effects of the operation. As he advanced to recovery, the leg first *improved*, then the eye, and lastly, the arm—the eye was last, however, to regain its entire function.

His recovery was gradual and progressive, without anything untoward worth noticing, until the 17th of October, when he was dismissed cured.

He is now thought by some to be rather more simple than before the injury—but from his peculiar disposition and known eccentricity, even that with his best acquaintances seems a matter of considerable doubt.

Remarks.—This case seems instructive in several points of view—first, on account of the proof it evinces of the wonderful power of the human system to react under such desperate circumstances. Secondly, as an evidence of the extensive injury that may be sometimes inflicted on the brain and its coverings without the much-dreaded consequence of inflammation and of softening. Thirdly, as showing the great difficulty, if not the impossibility, of correctly diagnosing injuries of the head according to the arbitrary rules of the books. The symptoms in the first stage, with the subsequent improvement, certainly strongly simulated concussion with slight extravasation, both of which were liable to be removed by time and the absorbents. Those of the latter were such as could only arise from permanent mechanical pressure, and alone curable by the trephine. And, fourthly and lastly, as establishing to my mind as firmly and as conclusively as one strong case can establish the pathological fact, that whilst a judicious postponement under doubtful circumstances, attended by proper treatment, does not naturally lessen the chances of success to an ultimate operation, it does greatly add to those of a correct diagnosis, and at the same time administers (what is just now needed throughout the whole domain of surgery) a wholesome admonition and salutary check to rash and meddlesome interference.

As showing the great uncertainty of prognosis in injuries of the head, I here append another case that occurred to me several years ago, exactly antipodal in all respects to the one presented. An infant about five years old, in a childish romp, fell from the shoulders of one of its playmates and struck with a very slight blow the left parietal bone near the sagittal suture against the edge of a square table-leg, with scarcely effect enough to produce a whimper or interrupt for a moment its innocent but roistering sports. The second day following the accident, her gait was observed to be awkward and clumsy; loss of appetite, and a little feverish. These unfavourable symptoms increased until they settled into entire hemiplegia of the right side. No apparent injury was discovered about the head. A blister to the parietal bones; purgatives; stimulating function; and general antiphlogistic measures gradually—but very gradually, as, I think, it was nearly twelve months before she was restored entirely to her usual activity and strength. She remained apparently well about a year, grew rapidly, kept uncomfortably fat, and seemed to be in the full possession of a vigorous and vivacious intellect. She was playing one morning, about two years after the injury, with her toys, in a word, unusually spirited, when she was suddenly seized with a violent pain in the head, went into a

furious delirium, and died in less than ten hours. The side of the head originally injured appeared greatly enlarged, when contrasted with the other. No autopsy was allowed.

Cases of Intestinal Disease. By WILLIAM GRIES, M.D., of Berks County, Pennsylvania.

The following cases I have no record of, but by their extraordinary character, they made such a strong impression on my mind, that I think I can recollect all the features of them that are of any interest to the profession.

Case of Retention of Fæces in the Colon resembling in their external appearance, exactly, an enlargement of the liver and spleen.—In March, 1826, I was called about three miles from my residence, to H. B., a very large, athletic man, aged about 28 years. He was taken the day before with pleuro-pneumonia. His skin and eyes had a muddy or dirty appearance, and he was much emaciated. He had been a sufferer, during two preceding years, from frequent attacks of intermittent fever, in which time he was attended by another physician. An enlargement had existed a long time in both hypochondria and epigastrium, which his physician, as he informed me, considered an enlargement of liver and spleen, in which opinion I accorded after a close examination. I had but little experience at that time, but I was confirmed in the opinion by the effect produced by two small cathartic pills, containing a little calomel and comp. ext. colocynth, which I gave him, after free depletion, and which brought on severe purging, and prostration, so that I was constrained to give something to restrain the action. There was no diminution of the hypochondriac enlargement. I treated him according to the views of that time. On the third day, I allowed him to take cherry water for his drink, and this brought on excessive purging, so that I had to stop it, on account of the prostration produced. He became furiously delirious, and my treatment seemed to do him no good. I should then have given him mercurials, but on my first visit he told me, "Do anything with me, only don't salivate me." I had no idea that I should do it, and, therefore, promised that I would not. This fear of his arose from the prejudice that several of the physicians in the neighbourhood had raised against me. I salivated but very seldom. However, I made up my mind that it should be done, and I sent for another physician from a distance, and he accorded with me, after a thorough examination of the case. He also considered the enlargement in the hypochondria to be of the liver and spleen. I gave him two grains of calomel three times a-day, combined with a little opium, to prevent purging. On the fourth day, in the morning, I observed, by his breath, that the specific effect of mercury was produced, and stopped giving it; at noon, I received a message that he was purging profusely, and fearing the effect, from former prostration, I hastened off to see him, but to my astonishment and pleasure I found him sitting on the edge of the bed, without support, eating a bowl of panada. His delirium was, in a great measure, gone. What I mainly wish to say, his enlargement of liver and spleen was gone! Several of the attendants declared that if they had kept all the fæces it would have filled a wooden vessel which was standing there, capable of holding at least three gallons. He recovered rapidly, and has since remained a healthy man. The reader, I trust, will be as able as I am to make useful reflections on this case.

Mechanical Obstruction in the Colon of rather a singular nature.—In July, 1833, I was called, two miles from my home, to see R. L., a little girl about eight years of age. She had been sick several days, and under family treatment. I found her suffering severely from pain in her abdomen, frequent

efforts to vomit, and a good deal of fever. Her bowels had not been moved for several days. I administered an enema, used means to appease her stomach and to subdue pain and fever. Afterwards I gave her several doses of calomel, but when I followed it up with other purgatives, the vomiting and pain returned. I used frequent mild enemata. At first some little fæces came, but soon nothing but the injection. Upon close examination of the abdomen, and from other attending signs, I felt convinced that there was mechanical obstruction, which the peristaltic action of the bowels could not overcome. I accordingly threw into her bowels, at last, three quarts of warm water, with a little soap, in a continued but gentle stream, by means of Maw's stomach-pump; she screamed out that we were "bursting her." Immediately on evacuating her bowels she passed large masses of dry or hard fæces, in which were entangled nine large worms. I then hoped that the obstruction was overcome, and gave a few small doses of cathartic medicine to be taken till next day; but, on my visit, finding the medicine had no effect, I repeated the enema, in the same quantity, which brought away again a mass of hard fæces and seven large worms. After this I had no difficulty with the case, except that she was slightly paralytic in her left leg. I have not seen her for many years; but have lately heard that she is married, and has several children; also that she has since had disease of the hip-joint, and is quite lame. I think that it is not out of place here to mention a circumstance in another case of obstinate constipation. After being completely foiled in all my efforts, I determined to use tobacco injections, and upon due reflection, I concluded that the smoke might suit best. I accordingly put a lit segar into the lateral tube of Maw's stomach-pump, and found it, thus prepared, the very best apparatus to generate and apply the smoke that could be possibly imagined. It had the desired effect.

Solid Ovarian Tumour, extending from Pubis to right Hypochondrium.—Cured by Incision followed by Suppuration. By DAVID PRINCE, M. D., St. Louis, Missouri.

Mrs. Cooper, aged about twenty-five, complained in the beginning of 1846 of a sudden attack of pain in the abdomen, from which she soon recovered after having been "bled and blistered." These attacks were repeated at irregular intervals, and soon the patient discovered by accident a tumour which she said moved readily from side to side in the intervals of the attacks of pain, but could not be removed during the painful paroxysms. This tumour, though sometimes larger than at others, gradually increased in size and became less movable, until it seemed to occupy a large portion of the abdomen lying upon the right side and projecting below, beyond the median line upon the left side, and extending from behind the pubis to the right hypochondriac region. As the tumour increased in size, the health became more continuously impaired and the painful paroxysms more frequently repeated. The catamenia became irregular but not suppressed. In this latter stage, the tumour could be made to roll slightly, but this was painful. A simulation of fluctuation (from rolling of the tumour) appeared upon palpation from side to side, but none from pressure in the direction of the long axis of the tumour—from pubis to right hypochondrium.

The patient assigned the origin of the tumour to the "meddling" of the midwife in her last confinement, as her discovery of the tumour was some time subsequent to this event. Patient thought that at first the tumour was upon the right side, but could not be certain. Patient has had occasional attacks of vomiting, and at one time imagined she must be pregnant.

December 25, 1847, made an incision three inches in length in the linea alba, midway between the pubis and umbilicus, and found the anterior surface of the tumour adherent to the posterior surface of the anterior wall of the abdomen. A free incision was made in the substance of the tumour itself and a portion of its interior removed. This appeared very much like the substance of the spleen as seen after death, but the small amount of blood lost from this surface indicated very little vascularity. A few minute hydatids were discovered, as the result of a breaking down of the structure of the tumour by means of a probe passed freely in various directions through the tumour.

It was determined to leave the wound open with a tent interposed, hoping for the removal of the tumour by suppuration. The patient, under the influence of the chloroform, expressed much regret upon the return of consciousness that the tumour could not be removed at once. A large amount of pus and for a long time was discharged, prostrating the patient, but generous diet, wine and quinine enabled the system to rally from this state, and to outlast the final removal of the tumour and the cessation of suppuration.

June 16, 1849. The husband of the patient writes, "My wife is now well and hearty, and I have the gratifying news to tell you that we have a fine healthy daughter born upon the tenth of April last."

Removal of three inches of Gum-elastic Catheter with Heurteloup's Instrument. By J. H. DILLSON, Pittsburgh, Pa.—Mr. Richardson, æt. 54, an old soldier, of temperate habits, about middle height, and nervo-bilious temperament, in using a defective gum catheter, for supposed spasmodic stricture, broke the instrument, and the detached fragment lodged in the bladder. About ten days after the accident I was requested to see him, in consultation with my friend Dr. Simpson. He was then unable to take any exercise, either in standing or walking, without suffering much pain and irritability of the bladder. I passed a gum-elastic bougie (the only one at hand), and distinctly felt the foreign body, but was unable to judge in what position it lay. I then suggested the perineal section as the only means of relief. To this he stoutly resisted, stating he feared the result, and that he had a large family dependent upon him. Examination disclosed no stricture of the urethra, but, to me, more evidence of organic disease of the bladder; therefore I determined to resort to some other means for relief before attempting the operation as for stone. May 2d, we again visited our patient, and introduced Heurteloup's instrument for crushing stone. I very soon grasped the fragment of catheter, but was unable to withdraw it. Questioning the patient as to his feelings during traction upon the catheter, I supposed it lay directly across the instrument and at right angles with the course of the urethra. I then loosened my hold, and moved the instrument in a direct line with the supposed position of the catheter, and again manipulating, I caught it a second time, and had the satisfaction to withdraw it with perfect ease. Mr. R. had no further difficulty.

Obituary Notice.—Died, in Keene, N. H., on Sunday, May 26, AMOS TWITCHELL, M. D., aged about 70 years, for more than forty years one of the most eminent physicians and surgeons in New England. A great number of physicians in the United States cherish a remembrance of him as their highly esteemed preceptor and friend. Dr. Twitchell graduated at Dartmouth College, in 1802, studied medicine with the late Dr. Nathan Smith, at that time, and for many subsequent years, a professor in that college, and obtained a

medical degree in 1805. He soon after settled in Keene, where he ever afterwards resided, and in a very short time rose to eminence in his profession. He has received repeated proposals to accept of a professorial chair, which he has always declined. He has often been elected president of the New Hampshire State Medical Society, and was an associate of the Philadelphia College of physicians. He was a prominent member of the National Convention which adopted the constitution of the National Medical Association, took an active part in its first organization, and he evinced a lively interest in its objects and its success.

Although never the occupant of a professorial chair, and having never made a book, he has done much for the usefulness and respectability of his profession. For forty years he has continually had students about him, often amounting to a considerable class; and he has done much, by his precepts and his example, to give them eminence in their profession, and to make them blessings to the communities which have afterwards surrounded them.

Such was the estimation in which he was held by his professional brethren, and by the community, that for a long time he can hardly be said to have had a professional rival in a very wide region about him. This pre-eminence resulted from a just estimate of his character—of those elements which, together, constitute a good and great physician. His characteristics were candour, frankness, sincerity, and beneficence, united with a strong judgment, an unspotted and unsuspected integrity, and sentiments that did not suffer him to stoop to anything mean or sordid. He possessed a clear and vigorous intellect, which he never ceased to cultivate, thus keeping himself well acquainted with all the resources of the healing art, and with the progress of its improvement.

Although he had great experience and eminent success as an operator, which is sometimes the chief, if not the sole, foundation of professional renown, this was far from being the chief claim to his distinction. It was his quick perception—ever awake to a scrutinizing observation—his extraordinary, almost infallible sagacity in deciphering, disentangling and analyzing the symptoms of difficult, obscure, and uncommon cases of disease; his just appreciation of the powers of nature, or of the human constitution, and his thorough knowledge of remedial agents. In these respects he has left no one superior, if he had any equal. *Sint semper tales.* B.

DOMESTIC SUMMARY.

Malignant Tumour of eight or ten years standing, cured after two years by a strict diet of bread and milk.—Dr. H. J. BOWDITCH has communicated to the *Charleston Medical Journal* (Nov., 1849), a case which he considers to be of this description. The subject of it was the late Dr. Twitchell, of New Hampshire, one of the most noted surgeons of New England. The following is the medical history of his life as given by Dr. B.:—

“1st. Carcinoma has appeared in his family. His grandmother died of cancer of the mamma; his sister of a scirrhus pylorus. These are all the data of his hereditary tendencies that bear upon our main topic.

2d. In very early life, Dr. T. was in delicate health. As a youth, he was stronger and was among the foremost in all athletic sports. While at college he became dyspeptic; had icterus, with enlarged liver, &c.; subsequently, he passed gall-stones. Whilst pursuing the studies of his profession he began to suffer from asthma, and for about 20 years was very much subject to violent attacks of it, causing orthopnoea, &c. During all this period, he ate animal food very freely, three times daily, and digested it easily, whereas vegetable food caused dyspeptic difficulties. Being induced, owing to a severe acne of

the face, to abandon this course, he gave up, for nine years, the use of meat. From the period at which he first abandoned meat, he has never had an attack of asthma, and Dr. T. considers these two facts related to each other as cause and effect. Moreover, vegetable food was soon easily borne. After the nine years of vegetable regimen, he began gradually to resume the use of the milder kinds of animal food, such as poultry and somewhat of the more solid meats, until two years since, when he commenced the very rigid diet, which will be described when treating of his local disease, which is the more immediate object of this paper. Finally, I will state, as indicative, perhaps, of the tendencies of the cutaneous system to morbid action, that about four years ago he had a papular eruption lasting six weeks, and, likewise, that very many years ago he had a wart-like tumour on the scalp, which disappeared under the use of creosote, externally applied.

3. The local disease, the course and result of which I present as the chief object of interest, commenced eight or ten years since as a small but hard tumour at the internal angle of the right eye. When first noticed, it was about as large as a mustard seed, and not painful. He occasionally touched it, and had some suspicion that it might eventually prove to be of a malignant character. It was imbedded in the substance of the cutis, and from the first seemed very slowly to augment in size. At times he *thought* he felt some lancinating pains in it, which radiated to the brow. It, however, did not interfere with the functions of the lachrymal ducts, &c. About 1843 the tumour had become nearly as large as a pea, and a tendency to the formation of a scab was observed. He then was induced to try some local applications, and frequently, until 1845, used 'Jenning's Ointment.' This would remove the scab, and displayed three small lobes, from which exuded a little purulent fluid. At first the morbid growth seemed lessened by this and other milder applications, but no permanent effect was produced. At times the discharge ceased, but only to return again, and the tumour gradually lost its tri-lobed aspect. It was at this period quite conspicuous to every bystander.

August, 1845, Dr. Geo. Hayward, of this city, removed the major part of it with the scalpel. For a short time, the wound seemed doing well; but finally it did not heal, and two months afterwards it was operated on again, and nitrate of silver was applied. Meanwhile, however, there had been experienced much local pain. It was deeper seated, less transitory, and radiated towards the brow and cheek. Sometimes it was severe enough to awaken him at night, and was worse usually after long rides.

The applications during 1846-7 were chiefly of a very simple character—cold cream, preparations of zinc, &c., and once the iodide of lead. All active applications caused inflammation of the conjunctiva. The tumour continued to augment slightly, and in the spring of 1847 it presented to my eye a decidedly malignant appearance. It was an ulcer about the size of the top of the finger, with ragged, hard, elevated edges, and the irritation from the discharge caused the patient frequently to apply his handkerchief to the part. At night, it caused a gluing of the lids and a discharge on the side of the nose. I certainly believed, and Dr. T. tells me that he thought, at that time, that the disease would gradually augment and involve the eye—and he had determined, if necessary, to have this organ extirpated. His general health, as it has been already stated, continued good; but, when not actively employed, the mind was somewhat depressed at the prospect before him. At the meeting of the American Medical Association in Philadelphia, May, '47, he consulted several of the eminent men whom he met. I believe, I may say, that all regarded it as a disease of a most serious nature, although some thought it might be cured by local applications, and others advised a further operation.

Dr. T. returned home discouraged, and he decided to give up all use of medicines internally or of external applications, but to try a course of the most rigid diet. Starting from a theory that malignant diseases arise from the fact that we take too much carbon into our system, he determined to live, from that time, upon a bread and milk diet, and if, at the end of some months, he did not find any diminution in the disease he still determined to use nothing but bread and water. Since his return from Philadelphia he has strictly adhered to the bread

and milk. He has used three times daily from $\frac{3}{4}$ iv to $\frac{3}{4}$ vi of cream or the richest milk, and same quantity of either white or brown bread. He continues that diet still.

The results, upon the *local disease*, have been as follows:—The pains in the part were lessened almost immediately. The purulent discharge very soon began to lessen, and in two or three months, it was evident that the disease was not augmenting. During the following winter the improvement was more decided. In the spring of 1848, being obliged to ride over dusty roads, to great distances, the eye was more irritated. Nevertheless, he felt, and his friends assured him, that the diseased part was really lessening and tending towards a cure. Since that period a steady improvement has taken place. The ulcerated mass, which was so perceptible to me two years since, has wholly gone, and now (August, 1849) I can discover no difference between the angles of the two eyes, save that in the right one there is a minute white spot, about a line in diameter, looking like a cicatrix. It is not harder than the adjacent parts, and had I not known of the existence of previous disease, I should not have noticed even this. There is no discharge, no pains, and a perfect cure seems to have been accomplished of a disease that had been existing for about ten years, in a patient aged 68 years.

The effects of this rigid diet upon the constitution, as a whole, are interesting.

In his mental estate, Dr. T. thinks he has been much less irritable than when he was *omnivorous*.

He had, at one time, an attack of vertigo (to which, however, he has been always liable), and, finding that he was *growing corpulent* under the diet, he, for a time, took less of it.

He has always been as strong as when indulging in a more generous diet.

He has been able to breathe better, having had less tendency to dyspnoea.

His digestion has been good, but with a slight tendency to costiveness.

His organs of circulation have been unaffected.

Renal excretion, for years, a little disturbed, as is not unfrequently the case in persons of his age.

Finally, Dr. T. presents to my mind the picture of a hale, robust man, in perfect health, so far as one can perceive, and but slightly touched by the influence of his many years of honorable and successful labour.

Reflections upon Dr. T.'s case.—The most important topic involved in the foregoing record is the restoration to health from what seemed to be malignant disease, and that this result followed the strict diet of bread and milk for two years.

Second. The cessation of asthmatic difficulties, after they had troubled the patient for twenty years, and that this cure likewise followed the change of diet, from an almost strictly animal diet to one quite the reverse, viz., strictly vegetable.

Third. Some readers may ask if these two cures are not merely examples of the '*post-hoc*;' and they may deny that there is any complete evidence of the '*propter hoc*.' I consent to the doubt, for it has entered my own mind. Nevertheless, if they are mere coincidences, they are pregnant with important suggestions. I confess that, in my own practice, I have never met with any cases so significant of the power that diet, simply and heroically used, has to *reorganize* a man.

Fourth. Dr. T.'s case becomes interesting as an evidence of the power of a man to subject his body to strict rule. In this epicurean age, it is quite refreshing to find one who 'eats to live, and does not live to eat.' A worthy professional brother of this city said, when the case was related to him, 'It might certainly be a question whether life were desirable under such a regimen!' I honour a hero wherever I find him, and the heroism of Dr. T., in undertaking and pursuing this course so long, merely in consequence of a theory, excites in me the greatest delight. In this skeptical, unbelieving era, I like to see any one having *faith*. Whether the theory was correct or not, it matters little—the fixed will of its follower arouses my enthusiasm; and this brings me to another topic of interest.

Fifth. The theory which governed Dr. T.—was it correct? I confess that I

am unable to solve the question; I merely suggest it. Some, whom I consider as our ablest animal chemists, think that it was by the process of starvation, as described by Liebig,* that the cure was wrought. It seems to me that this cannot be the true explanation—for Dr. T. has always been stout, and it will be remembered that at one time he actually gained flesh under the diet!"

Successful Ligature of the Femoral Artery for Wound of the Anterior Tibial.—Dr. E. P. BENNETT, of Danbury, Conn., records in the *New York Journ. Med.* (March, 1850), a case of this in a middle-aged farmer who accidentally wounded himself with a sharp-pointed, narrow-bladed pocket-knife. The knife penetrated the leg about two inches below the knee-joint, passing between the tibia and fibula, wounding the artery immediately below where it passes the interosseous ligament. He bled rather profusely; but a physician being near at hand, the wound was merely brought together and secured by adhesive plaster and bandage, without any suspicions in regard to the true nature of the case. The result of course was an aneurismal tumour, pulsating violently, and when the bandage was removed bleeding furiously. This was his condition two weeks after the reception of the injury the time Dr. B. was called to see him. Pressure was tried on the femoral artery, but could not be so applied as to be borne by the patient, and at the end of a week was abandoned, and the femoral artery was tied in the usual manner and at the usual place. The ligature came away on the 30th day, and the patient recovered, regaining the perfect use of his limb.

Fibrous Tumour of the left Ovary successfully removed by the large Abdominal Section.—Dr. W. H. VAN BUREN records in the *New York Journal of Medicine* (March, 1850) a case of this kind. The subject of it was 21 years of age, and had never menstruated. Five years ago she first perceived a small, hard, movable lump in the lower part of the belly, on the left side, which slowly increased in size, approaching meanwhile the median line, and causing an appearance externally of gradual enlargement of the abdomen. In three years it had increased to its present size, and since then, she is of opinion that it has not materially enlarged. About this period, however, owing apparently to the pressure applied to the abdomen by her mode of dressing—with a view of concealing its unsightly prominence—she began to be troubled by a protrusion from the genitals, which was now a source of excessive annoyance; so that with the mortification caused by the abdominal enlargement, and the annoyance of the protrusion, which interfered with her walking, she was determined to submit to any means that promised relief. She was a young woman of fine appearance, and a recent opportunity which had offered of changing her mode of life contributed also to induce her to seek for aid.

Her general health had always been excellent, and her family rather remarkable for vigour of constitution, to which she was apparently no exception.

On examination, Dr. Van B. found the abdominal cavity occupied by a large, uniformly hard, spherical tumour, about the size of the head of an adult. It occupied the centre of the belly, and was exceedingly movable. In fact, it could be turned almost entirely over on its own axis, in attempting to roll it from one side of the abdomen to the other. The hands could be readily passed under the tumour, on every side, when the patient was lying on her back, and it could thus be lifted, as it were, from its bed. It lay, ordinarily, in contact with the symphysis pubis, but the fingers could be insinuated beneath it on this aspect, without difficulty, and it could be forced upwards at least four inches from the pubes. Between the thighs lay the inverted vagina, and the uterus, in a state of complete *procidentia*, forming a tumour, which protruded more than four inches from the vulva. At the most dependent point of this tumour was, of course, the os uteri, into which Dr. Van B. introduced a female catheter, which penetrated to the distance of five and three-quarter inches, before it came in contact with the fundus of the organ.

The tumour presented neither the ordinary shape nor feel of an uterus in a

* Animal Chemistry, Cambridge ed. p. 25. 1842.

state of procidentia; it communicated to the fingers the idea of a long fibrous cylinder, about an inch in diameter. The os was perfectly healthy and natural in appearance, and contained some of the transparent and glutinous secretion of the follicles of the cavity of the cervix.*

On grasping the uterus as it lay between the thighs firmly with one hand, whilst with the other the abdominal tumour was pushed as far and firmly as possible upwards towards the diaphragm, no impulse could be recognized as communicated by one hand to the other; and at the time, when the greatest amount of force was applied, the two hands were fully eight inches distant from each other, thus affording fair demonstration that the attachments of the tumour to the uterus were susceptible of considerable elongation, which circumstance, taken in connection with the extreme mobility of the tumour, rendered it almost certain that the pedicle by which it was attached to the uterine apparatus was both long and slender. When the uterus was restored to its normal position, the lower edge of the tumour was distinctly felt from the vagina, and its probable connection with the left ovary recognized. This was confirmed by the origin of the tumour in the left iliac region, and by the result of a rectal examination in the upright position, by which means a knobbed projection from the tumour was distinguished, which was supposed to be the left ovary.

The state of the case and also the risks of a surgical operation having been candidly stated to the patient, she expressed her willingness to incur any risk for the prospect of relief.

The evident absence of any extensive connection of this solitary tumour with any of the abdominal viscera, its apparently purely fibrous character, and the absence of all suspicion of anything carcinomatous in its nature, together with the excellent constitution, and quiet, determined character exhibited by the patient, induced Dr. Van B. to think very favourably of acceding to her request, and of submitting her to an operation. Her opinion that the tumour had not increased in size since the appearance of the *procidentia uteri*, he satisfied himself was fallacious. The efforts she employed to compress her abdomen within moderate dimensions, had evidently forced the tumour more into the cavity of the pelvis, and in so doing had extruded its natural contents, whilst the enlargement of the abdomen was apparently arrested. From the gradual increase in the size of her dresses, it was only too evident that the disease was steadily growing.

The patient was confined to a diet of bread and water for a week, and two doses of oil given. The operation was performed at 1 P. M., Nov. 1st. The patient, who had not been allowed to eat anything for five hours previously, was rendered insensible by the inhalation of chloroform, in an adjoining apartment, and immediately before commencing the inhalation, she was requested to empty her bladder as perfectly as possible, her pulse at this time, as before, was 76. It was about 65 when she was placed upon the table, nor did it vary materially from this rate, or in quality, during the hour and fifteen minutes that she was kept under the full influence of the anæsthetic; for she was not allowed to suffer the slightest pain, until some minutes after she was again replaced in bed, after the completion of the operation, the dressing, and the changing of her clothing.

After carefully replacing the uterus and vagina in their natural position, Dr. Van B. made an incision on the *linea alba* ten inches in length, and cut carefully down to the peritoneum, tying or twisting all the vessels that gave blood, in order that as little as possible should escape into its cavity. This incision, after opening the peritoneum, and slitting it upwards and downwards with a probe-pointed bistoury to the full extent of the external wound, it was necessary to prolong fully two inches before the tumour, with some effort, could be forced through it. At this moment it was found that the omentum was adherent to the superior surface of the tumour, over a space as large as

* The whole tumour could be readily reduced into the cavity of the pelvis, where it would remain as long as the patient preserved the horizontal position, but as soon as she rose to her feet, it would come down again.

the open hand. This was quickly detached, the scalpel being carried as closely as possible to the periphery of the tumour; three vessels of the omentum required ligatures—of which both ends were cut off close to the knot, and the remaining portions returned to take their chance in the cavity of the peritoneum. The omentum detached, the pedicle of the tumour was found, consisting in fact of the left broad ligament of the uterus, singularly elongated and attenuated. This was detached from the tumour, still cutting close to its surface, and tying five arteries of considerable size as they were divided. The cut surface on the tumour, left by the division of this solitary attachment to the uterus, measured a half inch by two and a half inches. The tumour being thus removed, its pedicle, some six inches in length with five ligatures attached near to its fimbriated extremity, and containing palpably the Fallopian tube in its substance, was left protruding through the wound. This it was proposed to include, at its middle, in a solitary ligature, removing the distal portion, and dividing carefully the peritoneum on the uterine side of the ligature, in order to avoid strangulation—thus substituting one ligature for five. This was accordingly done, and the fimbriated extremity of the Fallopian tube, together with the point of attachment of the tumour to the broad ligament, was cut away. In the portion remaining there was no trace of an ovary. The right ovary and fundus of the uterus appeared to be in a normal condition.

The omentum was now replaced and the wound closed by the introduction of seven full-sized "Carlsbad insect pins" at equal intervals, around which were applied strands of soft coarse darning cotton, as recommended by Dieffenbach. Strips of adhesive plaster were accurately applied in the intervals, and the solitary ligature from the peritoneal cavity was brought out at the lower angle of the wound. A little scraped lint along the incision, a longitudinal compress, and a carefully applied bandage around the abdomen, completed the dressing. After changing some portions of her dress, our patient was carried to her bed-room, and was left, with but one attendant near her, in perfect quiet, until consciousness should return. At this time her pulse was seventy-five in the minute, and natural in quality.

Except two or three slight efforts at vomiting, the patient was perfectly quiet under the influence of chloroform. The peristaltic action of the intestines, usually so troublesome, was not observable. The tumour was twice twisted on its pedicle; it weighed seven pounds and measured 23 inches in circumference. On its surface were two irregularly-shaped commencing cysts, each about the capacity of $\frac{1}{3}$ ij, containing ordinary serum. At the point where the pedicle was attached was the knobbed projection, the size of half a billiard ball, which had been felt from the rectum. On laying the tumour fairly open, its structure was to all appearance purely fibrous, and that of the knobbed projection was similar in all respects to the rest of the tumour. Its substance was uniformly very dense, permeated by some large venous sinuses, and apparently well supplied with blood-vessels, some of which retaining their contents, made vascular patches on the cut surface; otherwise its colour in the anterior was of a dead white. Here and there on the cut surface a minute sac, or vesicle, the size of a very small pea, was to be seen laid open by the knife.

Dr. A. Clark, by a microscopic examination of the tumour, satisfied himself of the purely fibrous character of the tumour.

The patient gradually recovered without any very unusual symptoms—the smaller ligatures came away early, and on the 19th day the larger one from the broad ligament separated on slight traction.

At first the uterus maintained its normal position perfectly, but shortly the os began to approximate to the vulva, and at the same time she complained much of uneasy sensations and dragging pains in the pelvis, and experienced a strong disposition to bend the body forwards in walking. The mucous lining of the vagina was also somewhat prolapsed around the vulva, in consequence of the previous elongation of its connections. Dr. Van B. introduced into the vagina a spherical caoutchouc pessary $2\frac{1}{2}$ inches in diameter, which relieved the pain and enabled the patient to walk.

Dr. Van B. says that five operations for the removal of abdominal tumours

have now been done in New York, of which three of them, never recorded, terminated fatally from peritonitis, and two, one by Dr. D. L. Rogers, and the above, successfully.

Tubal Pregnancy, with Rupture of the Fallopian Tube. The following interesting example of this is recorded by Dr. W. C. HORLBECK, in the *Charleston Medical Journal* for May last.

The subject of it, a respectable married woman, had been perfectly well up to the moment of her attack, at 6 P. M. 22d, which was preceded by nothing premonitory, nor any over exertion. She was all at once seized with a violent pain in the lower part of her back and abdomen, after a sensation as of something dropping into the stomach. The surface of the body was cold, covered with a damp sweat, and the complexion perfectly pallid; there were occasional sighings, with a small, feeble and indistinct pulse. Her state of consciousness was much impaired, being in that imperfect condition of re-animation that is seen in persons recovering from fainting; so she was unable exactly to describe her feelings, but complained of general abdominal tenderness, referred particularly to the uterine region, and which was increased by pressure on that part. There was sickness of stomach and some attempts to vomit, with much restlessness and throwing herself from side to side. Under the impression that the counter-stimulant effects of her sufferings prevented action, to relieve her sufferings and equalize excitement a decided dose of morphine was administered, with directions to repeat it, and irritating agents directed to the skin. Her husband informed him that she had been pregnant but once, had not miscarried, had always been a healthy woman, had been married about two years, had weaned her child about one year old, seven days previously, and that she had menstruated three or four times since its birth, and had been a little so two days previously, but the quantity was less than usual. At daylight, on 23d, visited her, and found her face completely blanched, with an eye expressive of suffering, difficult to describe, surface cold, pulse fluttering, general abdominal tenderness and puffing, no tympanites; she spoke little, and was incapable of giving a satisfactory account of her symptoms. A large blister was applied over the abdomen and morphine repeated, which gave her some relief. At 12 A.M., her face was a little flushed, skin somewhat warmer, the heart labouring, but the pulse at the extremities not corresponding; imperfect reaction. At 4 P.M., similar condition as in the morning, it was difficult to rouse her, and she had one dark stool; stimulants ordered. At 9 P.M., sensibly weaker, abdomen distended, apparently moribund. 24th. She had passed a restless night, throwing herself from side to side, pulse indistinct and then capable of being felt, occasional heat and oppression in precordial region. In this condition she lingered until 10 P.M., fifty-two hours from the commencement of her attack.

Being doubtful as to the character of the disease, an autopsy was requested, and took place six hours after death. No ecchymosis in depending parts, usually seen after sudden death. On cutting into the abdomen an escape of blood took place, and my father then informed Dr. Wragg, who was present, that he was under the impression it would turn out to be a rupture of the Fallopian tube, from tubal pregnancy. On opening the abdomen, a large quantity of blood was discovered, filling up the interstices of intestinal convolutions, but more abundantly occupying the pelvic region.

The coagula and fluid blood, amounting to three quarts, being removed, the Fallopian tubes were examined, and a small rent found in the Fallopian tube near the uterus, of a size so small to be barely capable of admitting a crow's quill. The uterus and its appendages were removed, and on dissection presented the following appearances:—

The uterus was two or three times its natural size. The os tincae patulous, its parietes much thickened, and the internal cavity, of twice its natural size, was coated by a reddish exudation of some consistence, easily separated with the handle of the scalpel. One inch from the corner of the uterus, in the left Fallopian tube, was a tumour as large as a pigeon's egg, and in its posterior inferior part the small rent through which her life and blood had ebbed away. On incising the parietes of the tube carefully, coagulated blood was found sur-

rounding a transparent serous membrane, eight to ten lines in length, filled with limpid serum, in which floated a foetus five lines long, attached by an umbilical cord, with rudiments of arms and legs beginning to appear and a slight caudal projection of the coccyx. The ovaries were of full size, presenting several depressions; the right ovary contained one corpus senuatum, the left two; the three presenting all the characteristic appearances; in one of them there was a small deep-seated cavity, evidently caused by an ovisac not completely filled up, showing the appearance of a corpus luteum having not completely undergone all its changes. At the lower posterior part of the left ovary, corresponding to the side in which the foetus was found, on extending the incision, a beautiful display of a very recent corpus luteum in process of formation presented itself to view. A cavity of six or seven lines, with a yellow membrane to which, at its upper extremity, a clot of blood three or four lines in length, filling the ovisac about one-fifth, was adherent, organized, but still preserving its character of blood. The rest of the body was in a healthy condition. All the above circumstances can be as well seen as it is possible to be done, in the preparation which I had the satisfaction of presenting to the Museum of the Medical College of the State of South Carolina.

Diphtheritic Inflammation of the Pharynx as it prevailed epidemically, during the years 1847, '48 and '49, in Morgan, Monroe, and Guernsey counties, Ohio. By DAVID WELSH, M. D., of Cumberland, Ohio. (*Ohio Medical and Surgical Journal*, May, 1850.)—This epidemic, the author of the paper states, made its appearance on the first of May, 1847, with great violence, in the vicinity of Sarahsville, Morgan county, Ohio, and continued to spread slowly and irregularly, until it embraced a large scope of country, sometimes confining itself to a few families in the neighbourhood, for an indefinite time, and partially subsiding, then manifesting itself in some distant district, and proceeding in the same way, until it travelled over a large territory; not unfrequently revisiting the same families and neighbourhoods as often as a third or fourth time, and not unfrequently, after an apparent subsidence of the epidemic for some weeks, simultaneously breaking out precisely the same time—perhaps the same period of the day, as nearly as could be ascertained.

This epidemic has been raging for nearly three years, and occasionally with great violence, while at other times it has assumed a milder character.

The following description is given of the symptoms of the epidemic:—

"The constitutional symptoms were generally vague and deceptive at the onset, there being but little to attract the attention of the careless observer—generally nothing more than apparent lassitude, with a dulness of expression, and slight tendency to somnolency, and generally moderate febrile excitement, and derangement of the secretions; the patient complaining little or none.

"The above symptoms were all so slight as not to excite attention, except in those who were induced to anticipate the disease. They were co-existent with the local development of the disease, and as they increased, the general symptoms became more grave, the febrile symptoms more or less augmented, the pulse, in a large majority of cases, feeble, and rather small, with marked prostration of the vital forces; and in the severe grades of the disease, if permitted to progress, the bowels, which were previously costive, soon became irritable, and fetid diarrhoea set in with severe typhoid symptoms, a distressing sense of sinking, and cadaverous expression of the features, as things progressed to a fatal termination; the foregoing symptoms having been somewhat modified according to the peculiar terminations or changes to which the disease was especially obnoxious.

"The first local appearance in this disease consisted in a slightly swollen condition of the fauces, the tonsils presenting a pale red, and somewhat mottled appearance, sometimes of a deeper tint, and confined more particularly to one side than the other. Very soon there could be seen concretions forming upon the inflamed surfaces, first in small circumscribed patches of an irregular shape, not very dissimilar to patches of curdled milk, of varying shades of colour, sometimes whitish-yellow, or ash colour, and at other times of a dirty bluish tint. As the inflammation went on, these inspissated concretions

spread and coalesced, presenting the appearance of false membranes, sometimes covering the entire pharynx and velum palati. These false membranes presented different degrees of consistence, from a soft pultaceous thin film to a tough, thick, and somewhat elastic material. There was also much variation in thickness, from that of letter paper to three or more lines; and after an indefinite time—from a few days to a week or more—these formations frequently commenced falling off; and if convalescence was about to take place, a new layer was formed in its stead, of less thickness, and the same process continued until the inflammatory action abated.

"The tonsil and velum palati were sometimes so swollen as to affect the respiration and deglutition; the vitiated secretions of the mouth and pharynx were accompanied with an exceedingly fetid odour; and blood could be seen oozing from the inflamed surfaces, which, together with the depraved secretions, frequently became very annoying to the sufferers.

"Simultaneously with the progress of the disease in the pharynx, the cervical and salivary glands became enlarged and tender to the touch; this, however, was not always a concomitant. There was a bloated appearance of the face, especially over the orbicularis palpebrarum; and the pain and difficulty of deglutition by no means corresponded with the extent of the lesion present, they being slight, and causing but comparatively little complaining, and therefore calculated to mislead the judgment, without accurate examination of the phenomena. The muscles about the neck and inferior maxilla were usually stiffened in proportion to the intensity of the diseased action.

"A prominent characteristic of the inflammation was its tendency to diffuse itself along the mucous membranes, and this constituted one of the principal sources of danger. It not unfrequently extended up the nasal passages, so that they became lined with false membranes; it rarely extended into the mouth, but occasionally into the œsophagus. The most dangerous extension was into the larynx, trachea, and bronchi, when the disease put on all the symptoms of pseudo-membranous croup, and threatened a speedy dissolution. Another serious feature in this epidemic was the tendency to gangrene of the pharynx, exhibiting all the symptoms of that fatal malady.

"Another characteristic of this disease was the deposit of the same kind of product upon the cutaneous surfaces, wherever the epidermis was raised by a blister, or the skin was otherwise inflamed. A scarlet eruption on the skin was observable in about one case out of fifty, presenting somewhat the appearance of scarlatina, but it did not occur at the same period of the disease that the eruption takes place in scarlet fever."

The treatment found most successful was as follows:—

"The very best local application was that of nitrate of silver, in a solution of twenty grains to the ounce of water, increased in various degrees, as required by the condition of the parts; this solution was applied by saturating a piece of sponge attached to a whalebone or stick, and applying tenderly to the parts affected, previously depressing the tongue with an instrument, repeated from twice to some half dozen times daily, according to the effect produced, and the urgency of the case. It was found advantageous to separate the false membranes, as far as convenient, without irritating, so that the medicines might be brought into immediate contact with the diseased surface. In some cases, powdered alum proved to be a useful auxiliary when blown upon the parts, but was not very frequently employed. The sol. of sulphate of copper and dilute muriatic acid were used to good advantage, but were inferior in value to the nitrate of silver. As an antiseptic, a weak solution of chloride of lime was used as a gargle extensively, and proved very useful; occasionally a little was permitted to pass into the stomach. When the parts began to assume a dark and livid appearance, the escharotics were increased in strength; and in extreme cases, where the diseased action approximated gangrene, nitrate of silver was applied in substance to the parts, great care being used so as to apply it only to the parts in which there was diminished action, when flannel was kept on the thorax externally, and mild counter-irritations, short of blistering, such as sinapisms, frequently repeated, or ammoniated liniments.

"The good effect of the solution of nitrate of silver, when applied to the

pharynx, would seem to suggest the propriety of its application to the trachea or larynx, when practicable, where the disease first invades these parts.

"When the parts investing the nasal cavities become implicated, a weak solution of nitrate of silver was employed, by introducing the muzzle of the syringe into the anterior nares; in the same manner, weak antiseptic washes for cleansing purposes, etc.

"It may be remarked that when this disease assumed the gangrenous form, the remedial means usual in that formidable malady were employed, but with little success; happily, these unfavourable terminations were rare, except in neglected cases, or such as had been injudiciously treated at first. The above named local management, when judiciously and early employed, in conjunction with appropriate constitutional treatment, proved almost universally successful; on the contrary, those cases which were treated on different principles frequently resulted in death, either by the extension of the inflammation into the air passages or gangrenes. There were a few patients in whom the disease had been severe, who were left, after its subsidence, with symptoms similar to those of incipient phthisis pulmonalis, which were successfully treated with the syr. of iodine of iron internally, and frictions with salt water externally, fresh air, wholesome food, &c.

"The constitutional treatment consisted of a mild antiphlogistic course at the onset, in a large majority of cases. The alimentary canal was cleared by a moderate cathartic, of calomel and rhubarb, or some other appropriate evacuant. If the presence of worms was ascertained, or other sources of irritation were found to be co-existing, they were removed as far as practicable. In the progress of the disease, mild evacnants, attention to the secretions, and regulation of the diet, constituted the main interval treatment. Venesection was not resorted to, except in plethoric subjects, where the inflammatory action partook more particularly of the thenic character, or depletion was rendered necessary by accidental complications. The disease in this epidemic usually persisted from one to three or four weeks, and in debilitated constitutions it became necessary to husband the strength with great care. In scrofulous, or otherwise cachectic subjects, with a strong tendency to gangrene, the body was washed with salt water, once or twice daily, frictions to the skin, pure air, together with all the means requisite to support the general health, were put in force.

"The extension of the disease into the larynx almost always proved an unfortunate event; death closed the scene generally in less than twenty-four hours. I know of no case that resulted favourably during this epidemic, after the respiratory organs become involved. The great rapidity of progress, and the violence that characterized this disease, after it assumed the aspect of pseudo-membranous croup, left but little time for remedial means; bathing and emetics were of but little avail; the mercurial treatment was not resorted to, so far as the writer is aware, though recommended by high authority for the purpose of dissolving and promoting the absorption of the formation upon the mucous membranes, but it was feared that the fetid breath, the swollen condition of the gums, and strong tendency to gangrene would render the first appearance of ptyalism incognizable, and thereby endanger the disastrous consequences incident to the heroic administration of mercury to children over the age of two years. These facts, connected with the shortness of the time for the employment of remedies, rendered its use of doubtful propriety, except, perhaps, in a very small minority of cases."

University of Pennsylvania.—The venerable and universally esteemed Professor of the Theory and Practice of Medicine in this school, Dr. N. Chapman, has been induced, in consequence of feeble health, to resign the chair he has so long and ably filled.

No medical man in this country has ever attained a loftier position, or enjoyed a higher and more extensive reputation, or exercised a greater influence in the profession, than has Dr. Chapman; and we pray that his declining years may be as serene and genial as his career has hitherto been glorious and brilliant.

The trustees have received his resignation with regret, and have paid him the well merited compliment of electing him Emeritus Professor, as will be seen by the following letter:—

UNIVERSITY OF PENNSYLVANIA, *April 2, 1850.*

At a stated meeting of the Board of Trustees of the University of Pennsylvania, held this day, a communication was received from Dr. Nathaniel Chapman, resigning his situation as Professor of the Theory and Practice of Medicine in the University, when the following preamble and resolution were, on motion, unanimously adopted:—

The Trustees of the University of Pennsylvania have received, with much sensibility, the communication of Dr. Chapman's resignation. They learn from it, with sincere regret, that the state of his health will not permit him to continue the exercise of his duties as Professor of the Theory and Practice of Medicine, which they feel he has discharged long and well. In accepting the resignation of Dr. Chapman, the trustees desire to record an expression of their sense of the benefit which the University has derived from his eminent abilities, distinguished services, and long-established reputation, and to preserve such connection with him as his health will allow, by electing him Emeritus Professor of the same department which he has heretofore filled with activity and vigour.

Resolved, That Dr. Nathaniel Chapman be, and he is hereby elected Emeritus Professor of the Theory and Practice of Medicine in the University of Pennsylvania.

From the minutes,

GEO. EMLEN, JR.

Secretary of the Board of Trustees.

Professor Chapman's colleagues have testified their feelings at the separation in the following letter:—

UNIVERSITY OF PENNSYLVANIA, *April 8, 1850.*

DR. NATHANIEL CHAPMAN—MY DEAR SIR:—The Medical Faculty have received, with deep emotions, the official information of your resignation of the Chair of the Theory and Practice of Medicine in this institution. The event was not unexpected. The obvious failure of your health and strength through the past winter had strongly impressed the faculty with the painful conviction that the long period during which medical teaching had been illustrated and this school had attained its most brilliant reputation by your genius, eloquence, and varied erudition, was approaching its close.

Yet, when the moment of final separation came, though prepared for its announcement, it could not but awaken feelings of regret. All of our associations connected with you are recollections of the most grateful and pleasing character. To you we owe many personal obligations; our intercourse as individuals and as a faculty has been marked by harmony and softened by the uniform cheerfulness of your temper and courtesy of manners; and in all points of difficulty, we ever found guidance and resource in the clearness of your perceptions and the soundness of your judgment.

It is in the order of Providence that man's days are few and numbered—still fewer are the days of his power, his usefulness, and his greatness. You have the consoling reflection, that to you has been granted a larger portion of these blessings than fall to the lot of most men. The annals of our science record few instances of professional life as brilliant as your own; exempted for so long a period from suffering, disease, and infirmity. The veteran and the victor through half a century of conflicts in the fields of science, now that failing strength forces you to obey the signal of retreat, you can contemplate with just pride, the triumphs you have gained, and repose on the laurels you have won.

Relieved from the anxieties and duties incident to a responsible and onerous position, strength may again brace your limbs, and health recruit your frame. Graceful and beautiful is the decline of the eminent and the good, honoured with an illustrious name and past recollections, revered by friends, and blessed with the choicest enjoyments of life—the love, the solace, and affection of a devoted family.

That you may be long spared, in the possession of these blessings to your

family, is the ardent prayer of your friends and colleagues, the Medical Faculty of the University of Pennsylvania.

From the proceedings of the Faculty, by order. W. E. HORNER, Dean.

Dr. GEORGE B. WOOD, who has filled for some years with signal ability the Chair of Materia Medica, has been transferred to the Chair of Practice, a position which his admirable work on the Practice of Medicine, as well as his highly cultivated mind, his long experience and eminent abilities as a lecturer prove him to be well qualified to fill with honour to himself and advantage to the school.

Dr. JOSEPH CARSON has been elected Professor of Materia Medica and Pharmacy. Dr. Carson has for some years been professor of this branch in the Philadelphia College of Pharmacy, and is eminently qualified to fill the chair by extensive knowledge of his subject, and long experience as a lecturer.

Medical Graduates in the University of Pennsylvania.—At a Public Commencement held April 6th, 1850, in the Musical Fund Hall, Locust Street, the Degree of Doctor of Medicine was conferred by the Rev. JOHN LUDLOW, D. D., Provost, upon the following gentlemen; after which an Address was delivered by Prof. HUGH L. HODGE, M. D.

NAME.		RESIDENCE.		ESSAY.
Adams, James C.	N. M. Town,	Bourbon,	Ky.,	Phthisis Pulmonalis.
Alder, L. L.	Muncy,	Lycoming,	Pa.,	Cynanche Trachealis.
Allison, David R.	Saltzburg,		Pa.,	
Ashby, John W.	Farrowsville,	Fauquier,	Va.,	Therapeutics of Iron and its consequences.
Atlee, Walter Franklin	Lancaster,	Lancaster,	Pa.,	Simple External Ulcers.
Barnes, William A.	Centreville,	Montgomery,	Ohio,	Typhoid Fever.
Barr, William H.	Middletown,	New Castle,	Del.,	Vaccina.
Bassett, Albert	Salem,	Salem,	N. J.,	Erysipelas.
Battle, Joel D.	Chapel Hill,	Orange,	N. C.,	Diagnosis.
Beazley, John S.	Jackson,	Hinds,	Miss.,	Prognosis.
Beers, Solomon	Easton,	Northampton,	Pa.,	Cholera Morbus.
Benton, Charles C.	Ox Bow,	Jefferson,	N. Y.,	Typhus Fever.
Berkeley, Thomas A.	Stanton,	Augusta,	Va.,	Gunshot Wounds.
Bivins, J. A.	Murfreesboro',	Rutherford,	Tenn.,	Auscultation in the Diagnosis of Pulmonary Diseases.
Boulware, Muscoe	Port Royal,	Caroline,	Va.,	Pneumonitis.
Boyd, Charles	Frederick City,	Frederick,	Md.,	Peritoneal Section.
Boykin, Bias	Clinton,	Sampson,	N. C.,	Dysentery.
Brassell, Philip H.	Fayetteville,	Fayette,	Ga.,	Abortion.
Briggs, Junius A.	Norfolk City,	Norfolk,	Va.,	Concussion of Brain.
Brugh Ezra	Up. Black Ed.	Bucks,	Pa.,	Phrenology.
Burke, Richard H. L.	Burkeville,	Prince Edward,	Va.,	Concussion of the Brain.
Butler, S. W.	Tahlequah,	Tahlequah, Cher. Nat.,		Uses of Hydrangea Arborescens.
Byers, Washington	Mt. Mourne,	Iredell,	N. C.,	Remittent Fever.
Cantwell, Terence J.	Youngstown,	Westmoreland,	Pa.,	Amenorrhœa.
Carson, William	Chillicothe,	Ross,	Ohio,	Natural History of Disease.
Cavanaugh, James	Easton,	Northampton,	Pa.,	Delirium Tremens.
Chappell, John R.	Petersburg,	Dinwiddie,	Va.,	Cholera as it prevailed in Petersburg, Va., 1849.
Clement, J. B. Jr.	Philadelphia,		Pa.,	Therapeutics of Iodine.
Coates, Charles E.	Coatesville,	Chester,	Pa.,	Inflammatory Dysentery.
Coblentz, Joseph (M.D.)	Middletown,	Frederick,	Md.,	Nutrition.
Confer, J. Mackendie	Hollidaysburg,	Blair,	Pa.,	Gunshot Wounds.
Cook, John S.	Easton,	Northampton,	Pa.,	Diabetes.
Crabb, James T.	Philadelphia,		Pa.,	Epidemic Cholera.

NAME.	RESIDENCE.	ESSAY.
Crane, Samuel L.	Halifax,	Nova Scotia, Chemistry applied to Medicine.
Crawford, S. Wylie Jr.	Philadelphia,	Pa., Hypertrophy and Atrophy.
Currie, David M.	Leasburg,	Caswell, N. C., Healing Art.
Day, Jeremiah H.	Prairie du Chien,	Crawford, Wisc., Malarial Fever.
Dickey, William H.	Halifax,	Nova Scotia, Medicine as a Science.
Dougherty, Cyrus L.	Holly Springs,	Marshall, Miss., Typhoid Fever.
Douglas, George B.	Rome,	Floyd, Ga., Malaria.
Dudley, William A.	Petersburg,	Dinwiddie, Va., Cholera Infantum.
Dunham, Charles Jr.	Allentown,	Monmouth, N. J., Angina Pectoris.
Ealy, J. Hamlet	Schellsburg,	Bedford, Pa., Hysteria.
Eason, John T.	Sumterville,	Sumter, Ala., Fractures.
Fahs, Charles F.	York,	York, Pa., Gunshot Wounds.
Faison, Elias K.	Clinton,	Sampson, N. C., Ventilation.
Fauntleroy, William L.	Gloucester, C. H.	Gloucester, Va., Endocarditis.
Feild, Hume	Wyoming,	Brunswick, Va., Displacements of the Uterus.
Freeland, James B.	Paradise,	Lancaster, Pa., Gunshot Wounds.
Garden, W. A.	Wilmington,	New Castle, Del., Gunshot Wounds.
Gautier, William J.	Brazoria,	Brazoria, Texas, Vesico Vaginal Fistula.
Green, Wm. Hudson	Mount Zion,	Hancock, Ga., Menstruation.
Gregory, Thomas L.	Old Church,	King William, Va., Hepatitis.
Gresham, Charles	Stevensville,	King and Queen, Va., Menstruation.
Goodwin, Jos. Addison	Trappe,	Montgomery, Pa., Oxygen.
Gullett, A. F.	Okolona,	Monroe, Miss., Pneumonia.
Habersham, Francis B.	Savannah,	Chatham, Ga., Bilious Fluxes.
Hales, Robert	New Store,	Buckingham, Va., Tetanus.
Hall, Thomas C.	Fayetteville,	Cumberland, N. C., Uterine Hemorrhage.
Hank, J. William F.	Liberty,	Frederick, Md., Alcohol.
Hardy, Cornelius	M'Farlands,	Lunenburg, Va., Cholera Infantum.
Hardy, William A.	Hotel,	Bertie, N. C., Reflex function of Spinal Cord.
Harris, P. T. Jr.	Claiborn,	Parish, La., Physiological Effects of Alcohol on the Human System.
Harrison, W. A.	Fountain,	Greenville, S. C., Scarlatina.
Harvey, Samuel D.	Abington,	Montgomery, Pa., Dysentery.
Haynie, James W.	Heathsville,	Northumberland, Va., Acute Splenitis.
Heap, David P.	Tunis,	Africa, Cod-Liver Oil.
Heaton, Abraham S.	Woodgrove,	Loudon, Va., Mercury.
Heerman, Charles F.	New Orleans,	La., Sympathy.
Hobron, Albert	New London,	New London, Conn., Dysentery.
Hoffman, Joseph	Lebanonville,	Hunterdon, N. J., Fracture of the Femur.
Holderness, Robert C.	Yancyville,	Caswell, N. C. Rubeola.
Holmes, Daniel	Le Raysville,	Bradford, Pa., Professional Reputation.
Hunt, John G.	Darby,	Delaware, Pa., Histology of Muscular Tissue.
Hunter, David	Tamaqua,	Pa., Report of Cases of Scarlatina.
Ihrie, Ross R.	Easton,	Northampton, Pa., Dysentery.
Irving, Paulus A. E.	Cartersville,	Cumberland, Va., Gonorrhœa.
Jackson, John H.	Lexington,	Fayette, Ky., Water.
Jahraus, John Lewis	Philadelphia,	Pa., Gastritis.
Janney, Daniel	Purcellville,	Loudon, Va., Membranous Angina.
Jeffries, William G.	Jamaica,	Middlesex, Va., Fracture of the Clavicle.
Jenks, O. B.	Madison,	Madison, Va., Typhoid Fever.
Johnson, Charles M. Jr.	Femme Osage,	St. Charles, Mo., Acute Dysentery.
Johnson, Robert P.	Wilmington,	New Castle, Del., Observations on the pulse.
Johnson, William B.		Perry, Ala., Uterine Hemorrhage.
Jones, Matthew O.	Brownsville,	Fayette, Pa., Colour of the Human Family.
Kemble, George S. Jr.	Harrisburg,	Dauphin, Pa., Oxygen.
Kennedy, John J.	Sumterville,	Sumter, Ala.,

NAME.	RESIDENCE.	ESSAY.
Kent, James	Petersburg,	Dinwiddie, Va., Gonorrhœa.
Koontz, J. S. B.	Washington,	Washington, Pa., Secale Cornutum.
Loftin, O.	Wetumpka,	Ala., Cinchonia and its uses.
Ludlow, John G.	Neshanick,	Somerset, N. J., Character of the Physician.
Lunday, R. W.	Savannah,	Chatham, Ga., Venesection.
Marshall, Joseph B.	Annville,	Lebanon, Pa., Difficulty of Practice of Medicine in the country.
Martin, W. C.	Las Casas,	Rutherford, Tenn., Acute Bronchitis.
Mebane, Benjamin F.	Mason Hall,	Orange, N. C., Anatomy of the Heart.
Miller, James M.	Yorkville,	York, S. C., Cinchona.
Miller, S. Tyler	Paulsboro,	Gloucester, N. J., Fever.
Morgan, John H.	Middleton,	Rutherford, Tenn., Acetate of Lead.
Morton, Charles J.	Ridley,	Delaware, Pa., The Origin and Therapeutics of Ergot.
Moseley, A.	Buckingham, C. H.	Va., Aneurism.
Mottley, Robert C.	Deatonville,	Amelia, Va., Typhoid Pneumonia.
Murphy, John G.	Potter's Mills,	Centre, Pa., General Pathology of Inflammation.
M ^c Alpine, Charles R.	Kempsville,	Princess Anne, Va., Inflammation.
M ^c Cauley, R. D.	Lafayette,	Montgomery, Tenn., Chorea.
M ^c Chesney, Robert	Brownsburg,	Rockbridge, Va., Uterine Hemorrhage.
M ^c Cleskey, Law'ce A.	Mobile,	Ala., Yellow Fever.
M ^c Crea, Thomas P.	Logansport,	Cass, Ind., Intermittent Fever.
M ^c Enery, H. O. Jr.	Monroe,	Ouachita, La., Hygienic Management of Children.
M ^c Mullan, Jeremiah	Sparta,	Hancock, Ga., Treatment of Fracture of Patella.
Nancrede, Samuel J. G.	Philadelphia,	Pa., Gout.
Nebinger, A. Jr.	Philadelphia,	Pa., Cholera Infantum.
Page, Richard H.	Tuckerton,	Burlington, N. J., Menstruation.
Palmer, N. C.	Clinton,	E. Feliciana, La., Asiatic Cholera.
Patterson, A.	Laurel Hill,	Richmond, N. C., Effects of Mental Emotions.
Purnell, Francis J.	Berlin,	Worcester, Md., Remittent Fever.
Randolph, John F.	Yazoo City,	Yazoo, Miss., Collodion or Liquid adhesive plaster in the union of incised wounds.
Rawlings, J. W.	Nashville,	Davidson, Tenn., Acute Gastritis.
Read, Joseph E.	Norfolk City,	Va., Pneumonitis.
Ricks, Willie B.	Rocky-Mount,	Edgecombe, N. C., Inflammation, Ulceration, & Induration of the Cervix Uteri.
Riddick, Charles A.	Gatesville,	Gates, N. C., Chronic Hydrocephalus.
Ringland, John	Middletown,	Dauphin, Pa., Dysmenorrhœa.
Ruffin, James S.	Marengo,	Macon, Ala., Acute Gastritis.
Russel, William T.	Lewes,	Sussex, Del., Fœtal Circulation.
Royston, Joseph M.	Salem,	Tippa, Miss., Diarrhœa.
Sale, John W.	Davis' Store,	Bedford, Va., Hæmoptysis.
Sandt, John	Easton,	Northampton, Pa., Dysentery.
Sanns, John	Gallipolis,	Gallas, Ohio, Hæmoptysis.
Scales, Absalom W.	Triune,	Williamson, Tenn., Acute Rheumatism.
Schirner, John C. F.	Easton,	Northampton, Pa., Hæmorrhagia Uterina.
Sears, John W.	Flint Hill,	Rappahannock, Va., The Tongue as an Index.
Shannon, George H.	Sharon,	Wythe, Va., Difficulties of a Young Physician.
Sharp, John W.	Milford,	Kent, Del., Scarlatina.
Smaltz, J. Henry	Philadelphia,	Pa., Action of the Ligature.
Smith, A. Carpenter	Easton,	Northampton, Pa., The Moral and Physical Education of Females.

NAME.	RESIDENCE.		ESSAY.
Smith, A. Hamilton	Philadelphia,	Pa.,	Fracture of the Femur.
Smith, Darian	Grogansville,	Rockingham,	N. C., Modus Operandi of Medicines.
Smith, Thomas B.	Cooperstown,	Otsego,	N. Y., Epidemic Erysipelas.
Smith, William C.	Hummelstown,	Dauphin,	Pa., Poisoned Wounds.
Staggers, J. G.	Pineville,	Charleston,	S. C., Epilepsy.
Stark, Miles K.	Hicksford,	Greenville,	Va., Menstruation.
Steele, Edwin C.	Charleston,	Charleston D.	S. C., Acute Hepatitis.
Stewart, James T.	Peoria,	Peoria,	Ill., Hæmoptysis.
Stewart, William	Princess Anne,	Somerset,	Md., The manner of conducting labour.
Stuart, James H.	Harrisburg,	Dauphin,	Pa., Physical Education.
Sturdivant, Robert F.	Woodworth,	Mecklenberg,	Va., Remittent Fever.
Tatum, R. Herbert	Skinquarter,	Chesterfield,	Va., On the importance of a change in the Criminal code in relation to Feticide.
Taylor, Alexander C.	Newark,	Essex,	N. J., Dyspepsia.
Tebbs, Thomas F.	Leesburg,	Loudon,	Va., Nicotiana Tabacum.
Terrell, Albert J.	Ruther Glen,	Caroline,	Va., Tetanus.
Thompson, Hardman P.	Clearfield,	Clearfield,	Pa., Febris Puerpa.
Turner, Thomas	Chester,	Delaware,	Pa., Amenorrhœa.
Venables, George C.	Oakley,	Mecklenburg,	Va., Travelling of Acute Abscess.
Walker, Thomas R.	Amherst, C. H.	Amherst,	Va., Strumous Diathesis.
Wallace, J. Gordon	Fredericksburg,		Va., Menstruation.
Wallace, William D.	Cheraw,	Chesterfield,	S. C., Typhoid Fever.
Watson, Wm. Argyle	Newport,	Newport,	R. I., Erysipelas.
Welborn, W. J.	Monticello,	Jasper,	Ga., Digestion.
Whiting, J. Buchanan	Norfolk,	Norfolk,	Va., Anæsthetic Agents as adapted to Surgery.
Wickham, Wm. F. Jr.	Taylorsville,	Hanover,	Va., Aneurism.
Wilcox, John	Rockport,	Boone,	Mo., Auscultation.
Williams, Benjamin C.	Harrington,	Cumberland,	N. C., Acute Peritonitis.
Williams, Philip C.	Winchester,	Frederick,	Va., Acclimation.
Williams, Ralph P.	Yazoo,	Yazoo,	Miss., Pneumonia.
Wilson, Benjamin B.	Frankford,	Philadelphia,	Pa., Infanticide.
Wilson, John	Milton,	Caswell,	N. C., Cod-Liver Oil.
Withers, Samuel J.	Huntsville,	Madison,	Ala., Fractures.
Witten, Thomas G.	Jeffersonville,	Tazewell,	Va., Physiological conditions of Human life.
Young, P. W.	Oakhill,	Granville,	N. C., Diabetes Mellitus.
Ziegler, George J.	Philadelphia,		Pa., Zoo-adynamia.

At a Public Commencement held July 3d, 1849, the following gentlemen received the Degree of Doctor of Medicine.

NAME.	RESIDENCE.	ESSAY.
Philip Barraud Baker,	Virginia,	Vital Stimuli.
John F. Bourns,	Pennsylvania,	Opprobria Medicinæ.
Ridley Browne,	North Carolina,	Pneumonia.
Matthew Clay,	Alabama,	Pneumonia.
Elias B. Glick,	Ohio,	Inflammation.
Leonard Magruder,	Mississippi,	Cinchona, &c.
James M'Culloch,	Pennsylvania,	Vital Phenomena.
Christopher C. Peace,	North Carolina,	Icterus.
John T. Steele,	Tennessee,	Cause and Effect.

TOTAL, 178.

W. E. HORNER, *Dean.*

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It is the will of the Founder that no Physician, or Surgeon, or other officer, for the time being, of Guy's Hospital or of St. Thomas' Hospital, nor any person related by blood or affinity to any such Physician or Surgeon, or other officer for the time being, shall at any time be entitled to claim the Prize; but with the exception here referred to, this (the Astley Cooper) Prize is open for competition to the whole world.

Candidates are informed that their Essays, either written in the English language, or, if in a Foreign language, accompanied by an English translation, must be sent to Guy's Hospital on or before January 1st, 1853, addressed to the Physicians and Surgeons of Guy's Hospital.

Each Essay or Treatise must be distinguished by a Motto, and be accompanied by a sealed envelope, containing the Name and Address of the Writer. None of the envelopes will be opened, except that which accompanies the successful Treatise. The unsuccessful Essays or Treatises, with the illustrative preparations and drawings, will remain at the Museum of Guy's Hospital, until claimed by the respective writers or their agents.

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OF THE MEDICAL SCIENCES
FOR OCTOBER 1850.

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JOHN W. H. TRUGIEN, M. D., *of Portsmouth, Va.*
G. J. ZIEGLER, M. D., *of Philadelphia.*

TO READERS AND CORRESPONDENTS.

The following works have been received:—

Some Account of the last Yellow Fever Epidemic of British Guiana. By DANIEL BLAIR, M. D., Surgeon General of British Guiana. Edited by JOHN DAVY, M. D., F. R. S. L. and E., Inspector General of Army Hospitals. London, 1850. (From the Author.)

An Inquiry how far Consumption is Curable; with Observations on the Treatment, and on the Use of Cod Liver Oil and other Remedies; with Cases. By JAMES TURNBULL, M. D., Physician to the Liverpool Infirmary. Second edition, enlarged. London, John Churchill, 1850.

On the Health of London, during the six months terminating March 30th, 1850. By JOHN WEBSTER, M. D. Read before the Westminster Medical Society. London, 1850. (From the Author.)

Observations on Chronic Hydrocephalus, Acquired, Sanguineous, and Congenital; with an Account of three cases in which the Head was punctured, and an Examination of the Effects of the Operation. By FRANCIS BATTERSBY, M. B., &c., Surgeon to the Dublin Institution for the Diseases of Children. Edinburgh, 1850. (From the Author.)

Anormal Nutrition in the Human Articular Cartilages, with Experimental Researches on the Lower Animals. By P. REDFERN, M. D., M. R. C. S., &c. Edinburgh, 1850. (From the Author.)

The Diseases of the Breast and their Treatment. By JOHN BIRKETT, F. R. C. S., Assistant Surgeon to Guy's Hospital. London, 1850. (From the Author.)

Surgical Anatomy. By JOSEPH MACLISE, Surgeon. With coloured plates. To be complete in four parts. Part III. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

General Therapeutics and Materia Medica; adapted for a Text Book. By ROBLEY DUNGLISON, M. D. 182 illustrations. Fourth edition, revised and improved. 2 vols. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

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Human Physiology. By ROBLEY DUNGLISON, M. D., Prof. Institut. Med. in Jefferson Medical College. With nearly five hundred illustrations. Seventh edition, thoroughly revised and extensively modified and enlarged. 2 vols. 8vo. Lea & Blanchard, 1850. (From the Publishers.)

Observations on Certain of the Diseases of Young Children. By CHARLES D. MEIGS, M. D., Professor of Midwifery, &c. &c. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

A Practical Handbook of Medical Chemistry. By JOHN E. BOWMAN, Demonstrator of Chemistry in King's College, London, &c. &c. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

Elements of Medical Jurisprudence. By THEODORIC ROMEYN BECK, M. D. LL. D., &c. &c., and JOHN B. BECK, M. D., Prof. Mat. Med. and Med. Jurisp. &c. &c. Tenth edition, Vol. I. Little & Co., Albany, 1850. (From the Authors.)

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Elementary Chemistry, Theoretical and Practical. By GEORGE FOWNES, F. R. S., Prof. Pract. Chem. in Univ. Coll., London. Edited, with additions, by Robert Bridges, M. D., Prof. Chem. in Philad. Coll. Pharm. Third American from a late London edition. With numerous wood engravings. Philadelphia, Lea & Blanchard, 1850. (From the Publishers.)

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Transactions of the Medical Association of South Central New York at the Annual Meeting held at Elmira, June, 1850. Auburn, 1850. (From Dr. Geo. W. Bradford.)

Minutes of the Proceedings of the Medical Society of the State of North Carolina, at its first Annual Communication, held in Raleigh, April, 1850. Raleigh, 1850. (From Dr. Strudwick.)

Proceedings of the Twenty-first Annual Meeting of the Tennessee Medical Society, held at Murfreesborough, April, 1850.

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A Treatise on the Diseases and Physical Education of Children. By JOHN EBERLE, M. D. Fourth edition, with Notes and large Additions by THOMAS D. MITCHELL, M. D. Philadelphia, Lippincott, Grambo & Co., 1850. (From the Publishers.)

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Twentieth Annual Report of the Belfast District Asylum for the Insane Poor of the counties of Antrim and Down, and county of the town of Carrickfergus, for the year ending 31st March, 1850. Drawn up by the Resident Physician. Established A. D. 1829. Belfast, 1850. (From Robert Stewart, M. D., Resident Physician.)

Sixty-third Annual Report of the Regents of the University of the State of New York. Made to the Legislature March 1, 1850. (From Dr. Beck.)

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An Address before the Medical Society of the State of North Carolina, at its first Annual Communication, in Raleigh, April, 1850. By EDMUND STRUDWICK, M. D. Raleigh, 1850.

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Valedictory Address delivered before the Graduating Class of the Baltimore College of Dental Surgery, at the annual commencement for the session 1849-50. By T. P. HULLIEN, M. D., D. D. S. Baltimore, 1850.

Address delivered before the Graduating Class of the Baltimore College of Dental Surgery, at the tenth annual commencement. By ELISHA TOWNSEND, D. D. S. Baltimore, 1850.

An Address at the Dedication of the New Building of the Massachusetts Eye and Ear Infirmary, July 3, 1850. By EDWARD REYNOLDS, M. D. Boston, 1850. (From the Author.)

Der Aderlass in der Lungenentzündung. Von Dr. JOSEPH DIETL. Wien, 1848. (From Dr. Oppenheim.)

Cholera: with Reference to the Geological Theory; a Proximate Cause—a Law by which it is governed—a Prophylactic. By JOHN LEA. Cincinnati, 1850.

The Obstetrical Extractor—a paper read before the Chicago Medical Society. By JOHN EVANS, M. D. (From the Author.)

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The Gallery of Illustrious Americans, containing the Portraits and Biogra-

phical Sketches of twenty-four of the most eminent Citizens of the Republic since the Death of Washington. Daguerreotypes by BRADY, engraved by D'AVIGNON. Edited by C. EDWARDS LESTER, assisted by an association of Literary Men. New York, 1850.

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Practical Views on Medical Education; submitted to the members of the American Medical Association by the Medical Faculty of Harvard University. Boston, 1850. (From Dr. J. Bigelow.)

Annual Circular of the Medical Department of the University of Louisiana, session 1850-51. New Orleans, 1850.

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Medical College of Ohio. Annual announcement of Lectures for the session of 1850-51, and Catalogue of Graduates for the session 1849-50. Cincinnati, 1850.

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Annual Circular of the Medical Faculty of the Washington University of Baltimore, session 1850-51. Baltimore, 1850.

The following journals have been received in exchange:—

Gazette Médicale de Paris. Feb., March, April, May, and June, 1850—except No. 23.

Revue Médicale Française et Étrangère. Per J. B. CAYOL, D. M. P. Jan., Feb., March, April, May, and June, 1850.

Journal des Connaissances Médico-Chirurgicales. Publié par le Dr. A. MARTIN LAUZER. Feb., March, April, May, June, July, 1850.

Journal des Connaissances Médicales Pratiques et de Pharmacologie. Jan., Feb., March, April, 1850.

Annales Médico-Psychologiques. Journal destiné à recueillir tous les documents relatifs à l'aliénation mentale, aux névroses et à la médecine légale des aliénés. Par MM. les Docteurs BAILLARGER, BRIERRE DE BOISMONT, et CERISE. Jan., April, 1850.

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The London Medical Gazette. June, July, August, 1850.

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London Journal of Medicine. July, August, September, 1850.

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The Medical Times. July, August, Sept., 1850.

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The Half-Yearly Abstract of the Medical Sciences. By W. H. RANKING, M. D. July, 1850.

The Retrospect of Medicine, being a Half-Yearly Journal, containing a retrospective view of every discovery and practical improvement in the Medical Sciences. Edited by W. BRAITHWAITE. January—June, 1850.

British American Medical and Physical Journal. Edited by ARCHIBALD HALL, M. D. July, August, 1850.

The Dublin Quarterly Journal of Medical Science. August, 1850.

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Southern Medical and Surgical Journal. Edited by J. P. GARVIN, M. D. July, August, September, 1850.

The New York Journal of Medicine and the Collateral Sciences. Edited by S. S. PURPLE, M. D. July, 1850.

The Medical Examiner. Edited by F. G. SMITH, M. D. July, Aug., Sept., 1850.

The Charleston Medical Journal and Review. Edited by Drs. D. J. CAIN and F. P. PORCHER. July, Sept., 1850.

The Boston Medical and Surgical Journal. Edited by J. V. C. SMITH, M. D. July, Aug., Sept., 1850.

Buffalo Medical Journal. Edited by AUSTIN FLINT, M. D. July, Aug., Sept., 1850.

The North-Western Medical and Surgical Journal. Edited by Dr. J. EVANS and E. G. MEEK. July and August, 1850.

St. Louis Medical and Surgical Journal. Edited by Drs. M. L. LINTON, J. S. MOORE, WM. M. MCPHEETERS, and J. B. JOHNSON. May and June, 1850.

The Ohio Medical and Surgical Journal. Edited by S. HANBURY SMITH, M. D. July, Sept., 1850.

The New Orleans Medical and Surgical Journal. Edited by A. HESTER, M. D. Sept., 1850.

The American Journal and Library of Dental Science. Edited by Drs. C. A. HARRIS, A. WESTCOTT, and E. MAYNARD. April, July, 1850.

The American Journal of Science and Arts. Conducted by Profs. B. SILLIMAN and B. SILLIMAN, Jr., and J. D. DANA. July, Sept., 1850.

Transylvania Medical Journal. Edited by E. L. DUDLEY, M. D. June, 1850.

The Western Journal of Medicine and Surgery. Edited by L. P. YANDELL, M. D., and T. S. BELL, M. D. July, August, 1850.

The New York Medical Gazette and Journal of Health. Edited by D. M. REESE, M. D. July, Aug., Sept., 1850.

The New Hampshire Journal of Medicine. Edited by EDWARD H. PARKER, M. D. August, 1850.

The American Journal of Insanity. Published by the New York State Lunatic Asylum, Utica. July, 1850.

The Western Lancet and Hospital Reporter. Edited by L. M. LAWSON, M. D., and GEORGE MENDENHALL, M. D. July, August, Sept., 1850.

The Northern Lancet. Edited by F. J. D'AVIGNON, M. D., and H. NELSON, M. D. June, July, 1850.

The Western Medico-Chirurgical Journal. Edited by Drs. J. F. SANFORD and S. G. ARMOR. Sept., 1850.

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THE
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ART. I.—*Statistics of the Mortality of Baltimore, during a period of fourteen years, from 1836 to 1849 (inclusive).* By LEVIN S. JOYNES, M. D.

HAVING interested myself recently in investigating the mortality of Baltimore, as exhibited in the annual reports of the Board of Health, I have thought it might not be a useless task to lay the results of my investigations before the profession, as a contribution to medical statistics. But it is proper to state at the outset that the materials at my command are far from being as full and perfect as could be wished; so that it is impossible, as yet, to exhibit the "vital statistics" of Baltimore in so satisfactory a manner as has been done for other cities; and in particular for Philadelphia, by Dr. G. Emerson. It is to be hoped that the adoption of a better plan of registration will facilitate the accomplishment, and enhance the value, of future inquiries of this kind; and while the profession, represented by their national association and their State societies, are so anxiously striving to procure legislative action on this subject, it is right that the imperfections of existing systems of registration should be known. Such knowledge cannot but stimulate the zeal, and conduce to the success, of their efforts. The Medical and Chirurgical Faculty of Maryland have earnestly joined in these endeavours for the attainment of an object so important; but although their memorial received the favourable consideration of a committee of the last legislature, the report of that committee did not lead to any enactment on the subject.

There is at present no registration of births or marriages in Baltimore. The statistics of the mortality are derived from the reports of interments, made to the Board of Health, and by them regularly published. In compiling the present paper, I have used the annual reports of the board, from the earliest period for which they could be procured. They embrace a period of fourteen years, beginning with 1836 and ending with 1849. Some of the

more important details, however, are only given in the reports of the last five years. The aggregate number of deaths recorded in this official statement amounts to 41,911.

Before proceeding to analyze the bills of mortality, it is necessary to determine the number and composition of the population to which those documents refer. It is only after knowing the *number living* that we can profitably seek to ascertain the *number dying*, and their various modes of death.

The only enumeration of the inhabitants of Baltimore, during the period embraced in these reports, is that contained in the national census of 1840. The total population of the city at that time was 102,513.

Of this number the males amounted to 47,283
 “ “ females “ 55,230

showing an excess in favour of the females of 7947. Thus, in the general population, the proportion of the two sexes is expressed by the numbers 100 : 117, or 20 : 23. This gives a greater female excess than usual; the ordinary proportion stated by writers on medical statistics being 21 females for every 20 males.

But the population of Baltimore is made up of three distinct classes—whites, free coloured persons, and slaves—and we must regard each class separately. The following table exhibits the number of the white population, classed according to sex and age. It also shows the relative proportion of the two sexes at each designated period of life.

	Under 5 years.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	100 and upwards.	Total.
Males	6338	4498	3930	4216	8525	5728	2953	1556	762	236	70	10	3	38,825
Females	6218	4637	4410	5167	9566	5544	3275	2058	1098	392	107	17	7	42,496
Total at each age .	12556	9135	8340	9383	18091	11272	6228	3614	1860	628	177	27	10	81,321
Excess of Females		139	480	951	1041		322	502	336	156	37	7	4	3671
Excess of Males	120					184								

It appears from this table that, in the white population, amounting in the whole to 81,321, the females outnumber the males by 3671; the proportion of the two sexes being as 100 males to 109 females, or as 20 to 22 (nearly). The preponderance of females, therefore, although less than in the general population, is still greater than is usually found to exist.

It will be seen that the excess of females exists at every period of life designated in the table but two; viz., under five years, and between thirty and forty. The following statement will exhibit the proportional excess of males and females at the different ages. (It is proper to observe that, in this and other comparative statements, I have followed the example of Dr. Emerson in taking the *larger numbers* as the standard of comparison.)

Under	5	years the excess of	males is	.	.	1.89	per cent.
Between	5 and 10	"	"	females	.	3.00	"
"	10 and 15	"	"	"	.	10.88	"
"	15 and 20	"	"	"	.	18.40	"
"	20 and 30	"	"	"	.	10.88	"
"	30 and 40	"	"	males	.	3.21	"
"	40 and 50	"	"	females	.	9.83	"
"	50 and 60	"	"	"	.	24.39	"
"	60 and 70	"	"	"	.	30.60	"
"	70 and 80	"	"	"	.	39.80	"
"	80 and 90	"	"	"	.	34.58	"
"	90 and 100	"	"	"	.	41.18	"
Over	100	"	"	"	.	57.14	"

The preponderance of males under the age of five years is merely the remnant of that which existed at birth; and the diminution of this excess from 6 or 7 per cent. (the usual ratio at birth) to 1.89 per cent., places in a striking point of view the greater mortality of males during infancy. The continued operation of the same causes soon produces an excess in favour of the females, which increases up to the age of twenty years. Now, however, the increased danger to female life, consequent on child-bearing, produces a change in the opposite direction; the excess of females between the ages of twenty and thirty being little more than half of that which existed in the preceding period; and, between thirty and forty, there is a preponderance of more than three per cent. on the side of the males. In addition to the cause just assigned, this change in the proportion of the sexes is doubtless in part to be accounted for by the large number of young men born elsewhere, who every year take up their residence in the city with the view of engaging in commercial and other pursuits. After the age of forty years, the female preponderance returns, and continues to increase pretty constantly up to the latest period of life—attaining its maximum in the small number remaining above 100 years.

The *coloured population* of Baltimore amounts to 21,192, being something less than twenty-one per cent. of the whole. Of this number there are free, 17,980; slaves, 3212. The following tables exhibit the numbers at the different ages designated in the census, the proportion of the sexes, &c.

Free Coloured Population.

	Under 10 years.	10 to 24.	24 to 36.	36 to 55.	55 to 100.	100 and upwards.	Total.
Males	2172	1873	1590	1279	369	9	7,292
Females	2254	3076	2727	1861	740	30	10,688
Total at each age	4426	4949	4317	3140	1109	39	17,980
Female Excess .	82	1203	1137	582	371	21	3396

Slave Population.

	Under 10 years.	10 to 24.	24 to 36.	36 to 55.	55 to 100.	100 and upwards.	Total.
Males	279	506	225	118	34	4	1166
Females	365	952	453	214	62		2046
Total at each age	644	1458	678	332	96	4	3212
Female Excess .	86	446	228	96	28		880

In examining these tables, the same remarkable inequality in the proportion of the sexes, which Dr. Emerson has found to exist in the coloured population of Philadelphia, will be observed to hold good in that of Baltimore; and the disparity is still more striking among the slaves than among the free blacks. Thus, while among the latter there are 146 females for every 100 males, among the former the numbers are as 175 and 100 respectively. This excess of females is already remarkable in the first of the six periods of life designated in the tables. Of the free coloured population under ten years, the females exceed the males by nearly four per cent.; and among the slaves, the female excess is no less than twenty-three and a half per cent. Now if we refer to the table exhibiting the white population, we shall find that the number of male children under ten years is 10,836, and that of the females 10,855; the difference being only nineteen, a very small fraction of one per cent.

These striking facts appear to lead to the inference that the causes operating to produce a disproportionate mortality of male infants act with peculiar intensity upon the coloured population of large towns; and this is easily explicable by the influence of the unfavourable hygienic conditions by which this class of the population is, for the most part, surrounded. If, as a result of this influence, the mortality of the infants of each sex be increased in an *equal ratio*, the consequence is an increased disproportion in the numbers of those remaining. Thus, if in a given number of each sex, say 100, the ordinary mortality of the males be represented by 6, and that of the females by 4, the remaining numbers, 94 and 96, will stand to each other in the relation of 100 to 102 (nearly); but if the mortality of each sex be doubled, the resulting numbers, 12 and 8, taken from 100, will leave 88 and 92 as the surviving numbers; now these numbers stand to each other in the relation of 100 to 104½.

This is one probable explanation of the facts; but the records of mortality do not furnish the means of either demonstrating or disproving its correctness. Another view of the matter, however, suggests itself, which would form the subject of interesting inquiry under a well-conducted registration of births. Is the excess of male births among the negro population of large towns equal to that which is generally observed among whites? There is plausible ground for the conjecture that it is not. In Dr. Emerson's interesting paper "On

the causes operating in determining the proportion of the sexes at birth," contained in the number of this Journal for July, 1848, the following passage occurs (p. 83): "An attentive inspection of the very extensive reports made in several of the most enlightened countries of Europe, has proved to us most conclusively, that every influence operating in a community to maintain a high state of physical health and energy, leads to an increase in the proportion of male births; whilst, on the contrary, every agency, whether moral or physical, the effect of which may be to reduce the forces of organic life, will diminish such preponderance." Now such agencies, especially those of the physical class, which, combined together, constitute an unfavourable sanitary condition, are constantly operating upon the negro population of cities with much greater intensity than upon the mass of the white population. Their effects are conspicuously manifested in the higher rate of mortality existing among the former; and, according to the general law expressed in the above quotation, they should also operate to diminish the preponderance of male births.

It appears highly probable, therefore, that a smaller proportion of male births, and a higher infantile mortality, combine to produce the very remarkable disproportion which is found to exist in early life between the males and females of the coloured population. In the subsequent periods of life, other causes are no doubt brought into play, which tend to maintain and augment this disproportion—such as the greater demand for the labour of males in agricultural districts, whilst a larger number of females find employment in town as house-servants. A glance at the tables will suffice to show how great is the preponderance of females.

If we compare the different classes of the population with reference to *longevity*, we shall find the advantage very greatly in favour of the coloured inhabitants. In this respect, our tables furnish results entirely in accordance with those deducible from the census of the country at large. Among the white inhabitants, the proportion of those who have attained the age of 100 and upwards is 1 in 8,132; among the coloured inhabitants, it is 1 in 493; and, if we regard the free coloured and the slaves separately, the proportions are 1 in 461 and 1 in 803 respectively. We have here another illustration of a truth already well established by statistics—that there is no constant ratio between longevity and the ratio of mortality; for that class of the population of Baltimore which offers the lowest rate of mortality, contains the smallest proportional number of centenarians, and *vice versâ* (taking the coloured population as a whole). Probably, owing to the difficulty of determining the ages of the blacks, there is some exaggeration in the number of those who have attained an advanced age; but, making all due allowance on this score, the greater longevity of the negro race appears sufficiently well established.

If we institute a comparison between the two sexes in this respect, we find a much greater proportion of females than of males aged 100 and upwards,

both in the white and the free coloured population. Among the slaves, the reverse holds good.

Mortality.—We have now to consider the mortality of the population of Baltimore, during a period embracing four years preceding, and nine following, that in which the census just analyzed was taken—making in all, with the year 1840 itself, a period of fourteen years. The following table gives the number of interments of each sex in the general population, in each of the fourteen years; it also shows the number belonging to each of the three classes of the population.

Years.	General Population.			White Population.	Coloured Population.		
	Males.	Females.	Total.		Free.	Slaves.	Total.
1836	1223	1150	2373	1674	595	104	699
1837	1422	1292	2714	1997	584	133	717
1838	1453	1238	2691	2019	526	146	672
1839	1324	1107	2431	1809	483	139	622
1840	1209	1027	2236	1712	413	111	524
1841	1302	1146	2448	1813	504	131	635
1842	1422	1233	2655	1969	569	117	686
1843	1341	1179	2520	1913	472	135	607
1844	1491	1388	2879	2242	512	125	637
1845	1566	1541	3107	2383	617	107	724
1846	1668	1585	3253	2495	590	168	758
1847	1966	1829	3795	3024	551	220	771
1848	2181	2052	4233	3312	649	272	921
1849	2317	2259	4576	3519	791	266	1057
Total.	21,885	20,026	41,911	31,881	7856	2174	10,030

It appears from the above table that the deaths of males outnumbered those of females by 1859, or $8\frac{1}{2}$ per cent. But, if we compare the numbers for each year, we shall find considerable variation; the excess of male mortality being as low as 1.6 per cent. in 1845, and as high as 16.4 per cent. in 1839. (In these estimates, the still-born are excluded, the sexes of the still-born not being specified in the reports.)

Ratio of Mortality to the Population.—This can only be determined with certainty for the year 1840, inasmuch as that is the only year in the series for which the population of the city is ascertained. In that year (excluding the still-born, which amounted to 191), the number of deaths is found to be 1 in 50.13 of the general population. The number of still-born belonging to the three classes of the population not being distinguished in the reports of the Board of Health, we cannot determine with precision whether, and how far, the rate of mortality in 1840 varied in those classes. But, if we make the reasonable assumption that the still-births among the whites, free blacks, and slaves, were in proportion to their respective numbers, we find that the rate of mortality was as follows: in the white population, 1 in 52.11; in the free coloured 1 in 47.36; in the slave population, 1 in 30.59.

The rate of mortality for the year 1840, however, cannot be regarded as a

fair expression of the *average* proportion of deaths, since in that year the number of deaths was unusually small; being, indeed, less than in any other year in the series. It also appears, from the tables given by Dr. Emerson in the number of this Journal for July, 1848, that the mortality in Philadelphia was remarkably small in that year, having been proportionally lower than in any other year of the decennial series embraced in Dr. Emerson's calculations.

A very near approximation to the average ratio of mortality in Baltimore may be made, by assuming the population in 1840 to represent the *average* population during a series of nine years—including that year, the four years preceding, and the four years following—and by comparing with this population the average mortality of the nine years, excluding the still-born. By applying this method to the Philadelphia tables, I have found that the ratio of mortality, determined by calculation, varies but a very small fraction of one per cent. from that which the statistics establish.

Proceeding in this way, we find that the average rate of mortality for the nine years was,

In the general population,	1 in 45.42
“ white “	1 in 46.40
“ free coloured “	1 in 37.17
“ slave “	1 in 26.59

These rates, although considerably higher than those of the healthy year 1840, are nevertheless extremely favourable to the salubrity of Baltimore, and will compare advantageously with those of other large towns, whether in this country or in Europe. They are even lower than those given for Philadelphia by Dr. Emerson, in the paper just now referred to, leaving out of the calculation the years in which epidemic cholera prevailed in that city. It must be born in mind, that neither of the years in which the cholera at its first visitation ravaged this country, is embraced in our series; and, as for the year 1849, the cases of cholera occurring in Baltimore, if any, were few in number.

The comparatively high rate of mortality among the coloured inhabitants is no less remarkable here than in other American cities, and finds abundant explanation in the miserably bad hygienic conditions in which the black population is for the most part placed.

Influence of the Seasons on Mortality.—It is only for the last five years of the series that we are able to determine the number of interments for each month separately. The following table exhibits the mortality of the general population for each month of those years, as well as that of the whites and blacks respectively.

	January.			February.			March.			April.			May.			June.		
	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.
1845	237	51	288	161	54	215	158	56	214	177	66	243	218	59	277	171	61	232
1846	219	66	285	235	68	303	288	90	378	187	47	234	173	62	235	227	69	296
1847	183	47	230	180	48	228	231	84	315	187	51	238	239	74	313	270	54	324
1848	259	74	333	272	67	339	256	76	332	220	71	291	290	74	364	325	68	393
1849	266	87	353	225	67	292	260	65	325	260	95	355	223	74	297	233	94	327
Total	1194	325	1519	1073	304	1377	1193	371	1564	1031	330	1361	1143	343	1486	1226	346	1572

	July.			August.			September.			October.			November.			December.		
	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.	Whites.	Col'd.	Total.
1845	250	66	316	238	62	300	177	45	222	193	59	252	193	78	271	210	67	277
1846	190	67	257	235	81	316	193	50	243	197	46	243	197	65	262	144	57	201
1847	379	83	462	447	88	535	250	65	315	207	59	266	237	63	300	214	55	269
1848	505	133	638	257	76	333	232	64	296	261	73	339	188	72	260	187	68	255
1849	458	143	601	436	124	560	348	92	440	325	90	418	219	57	276	233	69	302
Total	1812	492	2304	1643	431	2074	1200	316	1516	1186	332	1518	1034	335	1369	988	316	1304

The following table presents a more perspicuous view of the relative mortality of the different months, the aggregates for the five years being alone given, and the months being arranged according to the number of deaths reported in each, due allowance being made for the unequal length of the months. The short months are all equalized to thirty-one days. It will be seen that the order differs materially for the white and the coloured populations, although July and August stand at the head of the list, and December at the foot, in both cases.

White Population.	Coloured Population.	General Population.
1. July 1812	July 492	July 2304
2. August 1643	August 431	August 2074
3. June 1267	March 371	June 1624
4. September 1240	June 357	September 1566
5. January 1194	November 346	March 1564
6. March 1193	May 343	January 1519
7. October 1186	April 341	October 1518
8. February 1177	February 334	February 1511
9. May 1143	October 332	May 1486
10. November 1068	September 326	November 1414
11. April 1065	January 325	April 1406
12. December 988	December 316	December 1304

The foregoing tables afford us data for determining the relative influence of the seasons on the mortality of the white and black races. Although the comparison shows that the summer months are most fatal to each race, and the winter months the least so, they prove that the proportion of deaths occurring in the warmest and the coldest seasons respectively, is different in the two classes. Thus, we find from the last table that the mortality of the white

population in the three winter months is 3359; in the three summer months it is 4722. For the negro population, the numbers are 975 and 1280. It appears, therefore, that for every 100 white persons dying in winter, about 141 die in summer; while for every 100 coloured persons who die in winter, the summer months destroy only 131. From an examination of the statistics given by Dr. Emerson, in his paper of July, 1848, I find that a similar and somewhat greater difference of proportion occurs in Philadelphia. The winter and summer interments of the whites are as 100 to 129; those of the coloured inhabitants as 100 to 116.

It also appears that the proportions of deaths occurring in spring and autumn are different—indeed quite reversed—in the two classes. Of the white population, a somewhat larger number (3494) dies in autumn than in spring (3401); while of the black population, the deaths in spring (1055) are rather more numerous than those occurring in the autumnal months (1004).

Mortality at Different Ages.—In the following table, the proportion of deaths occurring at different periods of life is exhibited. It embraces a series of five years, 1845–9, during which the total number of deaths, exclusive of still-born, was 17,330. In one column, the actual number dying at each age is given; and in another, the proportion in every 100 deaths.

Under 1 year	4436 equal to 25.59 per cent.
Between 1 and 2 years . .	1886 “ 10.88 “
“ 2 and 5 “ . .	1979 “ 11.42 “
“ 5 and 10 “ . .	883 “ 5.09 “
“ 10 and 21 “ . .	950 “ 5.48 “
“ 21 and 30 “ . .	1652 “ 9.53 “
“ 30 and 40 “ . .	1735 “ 10.01 “
“ 40 and 50 “ . .	1316 “ 7.59 “
“ 50 and 60 “ . .	824 “ 4.75 “
“ 60 and 70 “ . .	727 “ 4.19 “
“ 70 and 80 “ . .	578 “ 3.34 “
“ 80 and 90 “ . .	269 “ 1.55 “
“ 90 and 100 “ . .	79 “ 0.45 “
100 and upwards	26 “ 0.15 “

(It should be stated that, for the year 1849, the deaths from 10 to 30 years are classified in a different mode from that adopted for the other four years; the division being into three periods; viz., 10 to 15, 15 to 20, and 20 to 30 years. In the table, however, this difference is, for the sake of convenience, disregarded, and the decennial periods, 10–20 and 20–30, are supposed to correspond to the periods 10–21 and 21–30, adopted in the reports of the four previous years.)

It appears from the above table that more than one-fourth of the whole number of deaths occurs within the first year of life; and that *nearly one-half* are under the fifth year—47.89 per cent. In order to acquire more exact

ideas in regard to this excessive infantile mortality, let us endeavour to ascertain what relation it bears to the population which it affects.

As the population under 5 years, in the year 1840, is given only for the whites, there being no subdivision of the first 10 years in the enumeration of the coloured inhabitants, it is impossible to ascertain with precision the whole number living under 5 years. But if we assume that, of the coloured inhabitants under 10 years, the numbers belonging to the first and last halves of this period have the same proportion as in the white population—and this assumption cannot lead us into any great error—we find that the whole number living under 5 years was 15,491; while that between 5 and 10 was 11,270. Now, if we apply to the whole number of deaths for that year (excluding of course the still-born) the proportions given in our last table for the mortality at different ages, the deaths under five years will have amounted to about 979, or more than 1 in 16 of the population living at that age; while in the next period of 5 years, the deaths will have numbered only 104, or about 1 in 108 of the population—the mortality being nearly seven times as great in the first period as in the second.

The mortality in the early years of life seems to have undergone a sensible increase within the last twenty years, in proportion as the city has become more densely populated, and the attendant causes of infantile disease have accumulated. According to a table given by Dr. Dunglison in his *Elements of Hygiene* (p. 114), the deaths in Baltimore under 5 years, in the years 1829, 1830, 1831, and 1833, were 43.84 per cent. of the whole number. We have just seen that in the last five years the proportion was 47.89 per cent. A similar increase appears to have taken place in Philadelphia. According to Dr. Emerson, in the decennial period 1821–30 the average proportion of deaths under 5 years was 38.6 per cent. of the whole; while in the four years 1837–40, it was no less than 49 per cent.

Particular Causes of Mortality.—It is in reference to this important aspect of our subject that the imperfection of the Baltimore statistics is most apparent. The sources from which the records of the Board of Health are made up, are not of that reliable character which would alone entitle us to receive their results with implicit confidence. No certificate of a physician is required as to the fact or the cause of death; the sextons of the different cemeteries being the authorities to which the board refers, not only for the number of weekly interments, but for the particular causes of death. The sextons, in their turn, derive their information on the latter point, sometimes from the physician; sometimes from the family of the deceased individual; sometimes, it may be, from nobody at all. We have here the ready explanation of the looseness of the classification presented in the annual returns of the Board of Health, and of the large number of cases in which the causes of death are “*unknown*.” The tables which follow must be received with the allowance due to the circumstances here stated; they are only to be regarded as presenting an approximation to the truth.

Following the example of Dr. Emerson, I have substituted for the classification of the Board of Health, that proposed at the meeting of the American Medical Association in 1847, by its committee on the subject of a Registration of Deaths, &c. I have, however, departed from the latter plan in some instances, where a strict adherence to it would be clearly wrong. For instance, "bilious fever" I have classed with remittent fevers—the two terms being considered, in all this region, as expressive of one and the same disease—and not with *enteritis*, to which it is referred in the nomenclature accompanying the report of the committee. "Congestive fever," which is improperly referred to "typhus" in the nomenclature, I have allowed to stand by itself, as indicating a particular form of periodical fever, the cases of which cannot be referred exclusively either to intermittent or remittent fevers, inasmuch as the congestive or "pernicious" fever may have either of the latter types. "Mumps," again, I have classed with other epidemic diseases, to which it properly belongs; quite as properly, without doubt, as diarrhoea and dysentery, which the plan of the committee places in the same class. Some other particulars in which I have departed from this plan it is unnecessary here to specify.

Tables showing the mortality from different diseases in Baltimore during fourteen years, viz., from 1836 to 1849 inclusive.

Diseases.	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	Total.
I. ZYMOTIC DISEASES (EPIDEMIC, ENDEMIC, AND CONTAGIOUS).															
Cholera	2		2	2	1		9	8	7	8	4	9	9	32	93
Cholera infantum	191	131	199	125	114	194	198	159	129	113	139	249	244	290	2475
Croup	47	60	45	51	31	26	42	71	56	80	91	127	165	162	1054
Diarrhœa	2		1				2	1				7	15	69	97
Dysentery	25	39	25	16	27	22	25	22	13	13	7	42	46	148	470
Erysipelas			1	4			3	5		4	14	9	10	19	69
Fever, congestive	3	2	6	4	7	10	7	11	4	4	7	1		2	68
" gastric		3	5	8	10	7	12	17	22	36	25	29	20	21	215
" intermittent	3	14	3	1	2	4	14	15	3	3	2	3	2	11	70
" remittent	83	32	37	46	49	38	68	40	44	56	70	44	53	68	728
" typhus	41	14	33	20	13	18	19	10	21	19	20	135	87	161	611
Hooping-cough	43	69	18	75	9	35	63	20	59	62	26	104	59	59	701
Influenza								9		1				4	14
Measles	1	141	4	57	32	6	103	4	1	20	114	7	74	31	595
Mumps			1			2				1		1	1	2	7
Scarlatina	39	134	141	112	71	74	27	56	370	288	132	166	407	155	2163
Small-pox	1	52	71	2	9	1	1			110	115	1	4	19	386
(Varioloid)		1	1		2							1	1	1	7
(Varicella)		4	2	1	3	1					1	1		1	14
Syphilis	1			1									1	1	4
Thrush	3	6	6	5	3	6	4	6	2		5	7	7	4	64
II. SPORADIC, OF UN- CERTAIN OR GENERAL SEAT.															
Abscess		2	4	1	2	4	2	4	1	1	1	4	2	4	32
Atrophy	27	32	30	18	3	5	5	2		1				1	124
Cancer	10	9	11	7	10	8	9	12	17	12	20	17	10	20	172
Dropsy	50	50	63	60	57	49	44	42	58	44	62	72	79	110	840
Gout		2				2	2	2	1	1	2	1	2	1	16
Hemorrhage	9	4	10	5	13	11	4	14	6	8	10	8	14	6	122
Inflammation	3	1	2	1	1	1	1					1	3		14
Malformation														1	1
Mortification	3	10	3	5	3	6	2	8	5	3	7	5	6	1	67
Scrofula	2	12	11	3	8	5	4	3	2	5	3	3	8	10	79
Sudden death	32	22	21	26	27	25	14	19	13	1	4	14	18	28	264
Tumour	2	1	4	1	5	1	2	3	8	3	9	1	6	1	49

Diseases.	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	Total.
III. OF THE NERVOUS SYSTEM.															
Apoplexy	22	20	25	29	25	19	22	17	23	16	28	22	19	24	311
Cephalitis, &c.	19	38	25	35	18	27	23	34	34	46	64	89	83	67	602
Chorea		1		1			1								3
Convulsions	92	90	89	68	55	84	84	58	73	81	73	81	106	97	1135
Delirium tremens									1	3	3	4	6	5	22
Epilepsy			1												1
Hydrocephalus	34	34	43	26	63	64	47	55	50	47	60	70	79	105	777
Insanity	3	7	6		5	3	6	8	9	2	12	15	9	12	97
Neuralgia							1		1			3	1	5	11
Nerves, affections of										2	1		1	2	3
Paralysis	13	12	18	12	24	13	1	21	21	28	16	35	34	46	294
Tetanus	4	3	2	3	1	1	5	4	3	1	3	2	5	6	43
Brain, diseases of		1				4	1	3		1	3	3	3	11	30
IV. OF THE ORGANS OF RESPIRATION.															
Asthma	16	4	6	6	8	6	1	1	12	2	3	3	2	7	77
Bronchitis			1		3	5	4	5	6	5	11	8	8	7	63
Catarrhal fever	77	74	67	70	44	99	117	110	75	89	104	132	144	126	1328
Consumption	316	396	410	397	359	454	480	483	510	525	548	590	620	668	6756
Pleurisy	74	69	50	55	47	38	66	57	62	49	35	32	50	69	780
Pneumonia	8	8	9	10	9	7	10	16	31	16	11	51	61	38	255
Quinsy, &c.	4	7	7	4	2	3	1	3	1	7	1	4	1	1	46
Other affections of the throat	1	1	5	3	7	1	1	2	4	1	4	2	1		33
Diseases of the respiratory organs						1		1		1			3	4	10
V. OF THE ORGANS OF CIRCULATION.															
Aneurism	1				1		1								3
Carditis								1							1
Organic diseases of the heart.	6	7	4	5	20	17	27	19	30	39	47	30	29	53	333
VI. OF THE DIGESTIVE ORGANS.															
Colic	9	17	7	7	11	8	5	12	5	17	11	5	12	12	138
Colica pictonum		1					1	2						1	5
Dentition	16	28	21	15	21	28	29	29	16	19	42	69	92	102	527
Dyspepsia	4	1	3		4	3	2	1	3	1	6	9	5	8	50
Enteritis	15	10	14	20	21	23	36	46	37	34	51	60	67	47	481
Gastritis	3	3	3	2	1	1	3	4	6	2		3	2	4	37
Hernia	2				2	1	2	1	1		1	1	3		14
Intussusception													1		1
Peritonitis.														1	1
Ulceration of bowels										1	1				2
Worms	13	18	20	15	4	8	3	5	7	7	12	6	14	7	139
Diseases of stomach and bowels	1	1		1					1		1			4	9
Hepatitis		1					1	2	2			18	8	12	44
Jaundice	6	2	3	2	1	1	4	3	5		1	1	5	3	37
Liver, diseases of	18	13	13	10	11	7	13	6	13	13	16				133
Spleen, "					2			1							3
VII. OF THE URINARY ORGANS.															
Diabetes		1		1		1				1		1			1
Cystitis	1	1				1						2			9
Gravel and stone	1	2	3	4	4	1	3	2	3	5	1	4	1	2	35
Nephritis	1	2		2		1	2	1		1	1	2	2	4	19
Prostate gland, diseases of		1													1
VIII. OF THE GENERATIVE ORGANS.															
Childbirth	18	20	28	21	20	31	14	21	29	34	36	35	62	78	456
Puerperal fever														1	1
Amenorrhœa													1		1
Dysmenorrhœa			1												1
Inflammation of womb				2						1					3
Diseases of womb						1	1		2	1	2		1	2	8
IX. OF THE ORGANS OF LOCOMOTION.															
Rheumatism	2	5	5	6	9	6	10	7	6	6	4	7	5	9	87
Joints, diseases of									2			1	2		5
Hip, "			1	1		1	2			1		1	1		7
Spine, "	1	3	3	2	8	3	3	9	3	10	8	3	5	8	69

Diseases.	1836	1837	1838	1839	1840	1841	1842	1843	1844	1845	1846	1847	1848	1849	Total.
X. OF THE INTEGUMENTARY SYSTEM.															
Ulcer	1			2		1			1						5
Skin, Diseases of					1									1	1
Carbuncle															1
XI. OLD AGE.	137	93	94	118	96	94	98	120	93	97	129	144	156	171	1640
XII. EXTERNAL CAUSES.															
Accident	31	28	33	24	20	27	55	21	27	37	37	34	39	37	450
Burns and Scalds	14	15	16	12	16	10	7	8	10	13	8	12	17	15	173
Drowned	25	39	23	35	22	27	26	24	27	34	40	34	31	25	412
Executed												1			1
Cold	5	2	3	3	3	1	2	4	1	3	1	5	1	7	41
Heat (ictus solis)			3			2				1	1	1	2		10
Drinking cold water	1		28				2		1	5	9		1	9	56
Hydrophobia	1	2							1				2		6
Infanticide	1			1		1	1	2	4	3	2	1	1	1	20
Intemperance	50	35	47	30	35	29	18	15	10	20	16	16	23	33	377
Lightning								1			1		1		3
Murder			1						1	1					3
Poison	2	1		1	2		2	4		3	4	2	1	3	25
Strangulation								2	1				1		4
Suicide	10	5	6	3	7	3	5	1	5	6	4	3	5	4	67
Wounds, &c.	4	12	4	2	4	4	2	5	6	1	11	3	4	5	67
Fracture			1												1
Amputation								1				1	1		3
Bite of a dog								1							1
Stung of a spider	1						1			1					4
“ wasp				1											1
Causes } Infants	478	516	535	515	468	487	490	446	466	575	533	587	489	618	7203
unknown } Adults	16	13	30	20	46	29	25	47	82	85	87	96	178	137	891
Still-born	181	196	215	171	191	201	178	187	214	211	257	381	372	411	3366

RECAPITULATION.

CLASS	I. Zymotic Diseases	:	9905
“	II. Of General or Uncertain Seat (Sporadic) . . . . .	. . . . .	1780
“	III. Of the Nervous System . . . . .	. . . . .	3329
“	IV. Of the Respiratory Organs . . . . .	. . . . .	9378
“	V. Of the Organs of Circulation . . . . .	. . . . .	337
“	VI. Of the Digestive Organs . . . . .	. . . . .	1621
“	VII. Of the Urinary Organs . . . . .	. . . . .	65
“	VIII. Of the Generative Organs . . . . .	. . . . .	470
“	IX. Of the Organs of Locomotion . . . . .	. . . . .	163
“	X. Of the Integumentary System . . . . .	. . . . .	7
“	XI. Old Age . . . . .	. . . . .	1640
“	XII. External Causes . . . . .	. . . . .	1725
	Causes Unknown . . . . .	. . . . .	8094
	Still-born . . . . .	. . . . .	3366

Deducting from the aggregate mortality for the fourteen years (41,911) the deaths from causes unknown, or not specified, and the still-births, we have a remainder of 30,451, constituting the number properly subject to analysis. This large reduction, however, falls chiefly upon infantile diseases, less than one-ninth of the very large number of deaths by causes unknown belonging to the adult class; a proportion amounting probably to not more than one in twenty, (if so much) of the whole adult mortality.

Of the different classes of diseases, it will be observed that the greatest number of deaths is due to the “zymotic” class; the mortality under this head amounting to nearly one-third of the whole mortality from ascertained causes. Cholera infantum and scarlatina take the lead in this class; indeed,

with the single exception of consumption, their ravages are not equalled by those of any other disease in the whole catalogue.

Only 93 deaths are assigned to "cholera;" and, in the reports of the Board of Health, not one of these is attributed to Asiatic or epidemic cholera, all being set down to "cholera morbus" (except one in 1845, registered simply "cholera"). It is nevertheless by no means certain that Baltimore was so fortunate, during the year 1849, as to escape entirely the visitation of cholera which ravaged the cities north, south, and west of it. I have been informed by intelligent practitioners of Baltimore, that a few cases of well-marked Asiatic cholera were observed by them in their own practice; although it would seem that the deaths from this source were either reported to the Board of Health as cases of common cholera, or were set down to this latter disease, owing to the existence of some doubt as to their true nature. That something more than common cholera was present, is rendered highly probable by the fact that the deaths attributed to cholera morbus in 1849 (32 in number) exceed the aggregate of the four preceding years. It will be further noticed that the same unusual mortality from other bowel affections, which attended the prevalence of cholera elsewhere, existed to a considerable degree in Baltimore. The total number of deaths from cholera morbus, cholera infantum, diarrhœa, and dysentery, was 539, against 314 in the year 1848.

Although these facts show that the *cholera influence*, which diffused itself with such fatal intensity over the land, *was felt* in Baltimore, it cannot but appear singular that it did not manifest itself in a more virulent and epidemic form, while the disease was committing such fearful ravages at the Baltimore city and county almshouse, situated at a distance of less than three miles from the city. That there is nothing in the locality or other permanent conditions to account for this comparative immunity, is proved by the fact that Baltimore suffered severely from the epidemic of 1832, and to a less extent from that of 1834.

The deaths by cholera at the almshouse last year are not reported in the annual statement of the Board of Health, because the interments at that establishment are never reported in the city returns, although a portion of the paupers inhabiting it are sent thither from the city.

Among the fevers mentioned in the table, there is one which is rarely met with in bills of mortality; I allude to "gastric fever," which appears to be an important cause of mortality in Baltimore, no less than 215 deaths being assigned to it—an average of 15 per annum. Let it not be inferred, however, that this gastric fever is a disease peculiar in its nature, and limited in its prevalence to the city of Baltimore. The term is used by a portion of the profession, and by the public, who derive it from them, to designate what others call *typhoid fever*. This is true, at least, of the majority of the cases so termed; but, as the same designation is sometimes vaguely applied to other febrile affections accompanied by gastro-intestinal disturbance, I have thought it best to let all the cases termed gastric fever stand as they are registered,

since they cannot all be referred with certainty either to typhoid fever, or to any other given class.

Under the head of typhus fever are given, not only the cases registered as such, but a few cases of "nervous" and "inflammatory" fever, as well as all the cases of "ship fever," of which 106 fatal cases are recorded in the year 1847, 7 in 1848, and 14 in 1849.

In the second class, including diseases of general or uncertain seat, I have ranged under the head of "inflammation" only those cases in which the seat of the inflammation is not specified, and one case of ophthalmia, recorded in the year 1839. The cases set down to "atrophy" are all recorded as "marasmus" in the classification of the Board of Health. The gradual diminution of the annual numbers under this vague head must be regarded as indicative of a decided improvement, either in the diagnosis of physicians, or in the system of registration; and the same remark may be made of the *sudden deaths* recorded in the table.

Class III. Diseases of the nervous system. Under the head of "cephalitis," are included all the cases registered as "inflammation of the brain" and "phrenitis;" 30 cases are enumerated under the latter title, the remaining 572 under the former. No deaths from delirium tremens are registered prior to 1844; they are doubtless included under the general head of intemperance in a subsequent class. Of the 30 cases assigned to "diseases of the brain," 23 are recorded as "congestion of the brain;" the remaining 7 "concussion."

Class IV. Diseases of the organs of respiration. The diseases belonging to this class are next in fatality to the zymotic class, the deaths due to them in fourteen years numbering 9378; and nearly three-fourths of this great number (6756) are the victims of consumption. Compared with this fearful aggregate, the mortality from any other disease appears trifling; no three other diseases in the catalogue have destroyed so many lives. What are the occasional ravages even of Asiatic cholera, with all its horrors, compared to the merciless and unceasing inroads of this greatest enemy of the human family? Baltimore, it is clear, can claim no advantage over the other great cities of this Union as regards the prevalence and fatality of phthisis. Indeed, according to the most reliable statistics, her condition in this respect is worse than the average. The deaths from consumption in Baltimore are in the proportion of 1 in 6.2 of the whole mortality. If we exclude the still-born, which ought to be done in all such comparisons, the proportion is 1 in 5.7. It might even be maintained that we ought to compare the deaths from consumption with the total number of deaths from *known causes* alone, in order to arrive at the true proportion. But this would give an exaggerated result, because the deaths from unknown causes are chiefly infantile, and the deaths from consumption affect principally the adult population. It is enough that *more than one-sixth* of the whole mortality of the live-born is caused by consumption, and that the deaths from this cause in the last fourteen years amount to one-twentieth of the present number of inhabitants!

In order to determine the proportional mortality from this disease in more northern cities, I have examined the tables of mortality of Boston for 21 years, given by Dr. Curtis, in his report to the American Medical Association on the public hygiene of Massachusetts; Dr. Griscom's report of the mortality of New York for 1842; and Dr. Emerson's tables for Philadelphia already referred to. Setting aside the still-born, the proportion which the deaths from consumption bear to the general mortality in these three cities is as follows:—

Boston	-	.	.	.	.	.	.	1 in 6.51
New York	.	.	.	.	.	.	.	1 in 6.33
Philadelphia	.	.	.	.	.	.	.	1 in 7.03

It is proper, however, to add, that Dr. Hayward, from an examination of the statistics of New York for 30 years, gives 1 in 5.547 as the proportion for that city. Supposing this to be the more correct ratio, the Baltimore proportion of 1 in 5.7 is still, as I have said, decidedly higher than the average.

A large number of deaths (1328) is set down to "catarrhal fever." A portion of these cases probably belong to acute bronchitis, but the majority are undoubtedly due to the lobular pneumonia of infants.

A comparison of the numbers assigned to pleurisy and pneumonia shows plainly that popular parlance, rather than scientific accuracy, has controlled the registration of the deaths by these two diseases; for, even were the numbers reversed, the deaths from pleurisy would be too numerous, and those from pneumonia too few. (I should add, that among the 285 deaths by pneumonia are included 16 registered in the reports as "inflammation of the breast.") Of the 10 deaths classed under the general head of "diseases of the organs of respiration," 9 are due to "congestion of the lungs," and 1 to "phthisis laryngea."

In the sixth class, it will be seen that but a single death by peritonitis is recorded. Doubtless the numerous deaths in "childbirth," contained in the eighth class, include the majority of the fatal cases of that disease. A similar remark may be made in reference to the single death attributed to puerperal fever in the latter class. Of the "diseases of the stomach and bowels" not specified in the table, 1 case is set down to piles, 1 to constipation, 1 to an undefined disease of the stomach, and the remaining 6 to congestion of the bowels.

The fatal case of cutaneous disease mentioned in the tenth class is urticaria.

The deaths by "old age," 1640 in number, are much too numerous, amounting to 1 in 24 of the whole. This is one of those terms too often resorted to in bills of mortality to conceal ignorance as to the actual cause of death.

The deaths from external causes amount to 1725. If we exclude from this number the deaths by intemperance, and consider only those due to the strictly accidental and violent causes, we find that they constitute about 1 in 28 of the general mortality. The deaths assigned to intemperance, added to

the 22 from delirium tremens, yield a total of 399 deaths caused directly by drunkenness; and these are few in comparison with the fatal cases of dropsy, of diseases of the nervous system, of the digestive organs, &c., caused indirectly by the abuse of intoxicating drinks.

The suicides amount to 67 for the fourteen years; an average of about 5 per annum, in a population which, for the greater part of the period, has been considerably over 100,000. These facts lend no support to the assertion of some European writers on medical statistics (Balby, Casper, Guerry, and Quetelet), that "suicide is much more frequent in the United States than elsewhere. Next comes England, then France," &c. In Baltimore, the average annual number of suicides is less than 1 in 20,000 of the population; in Philadelphia it is about 1 in 17,300; whereas, in Paris, it is no less than 1 in 3600; and, taking the whole of France, town and country together, it is 1 in 19,000.

The still-births amount to 3366, or about 8.03 per cent. of the aggregate mortality.

In conclusion, I would express the hope that the medical profession of Baltimore will interest themselves in securing the adoption, by the city authorities, of a system of registration more free from objection, and more fruitful of useful results, than that which has hitherto prevailed. In a State possessing but one large city, and in which the country districts are, in general, far from being densely populated, many years will probably elapse before the State Legislature shall be ready to organize a general and complete system of registration for the entire commonwealth. But nothing is wanting to secure the immediate adoption of such a system for the city of Baltimore, but a conviction on the part of the proper authorities that the present plan is defective, and that a better and more useful one might be carried into effect with but little or no increase of expense and trouble. Their common sense would teach them that, if it is worth while to have a registry at all, it is worth while to have a good one; and the Board of Health would doubtless cheerfully bear testimony with the rest of the profession that the present *is not a good one*.

ART. II.—*Extracts from the Records of the Boston Society for Medical Improvement.* By WM. W. MORLAND, Secretary.

April 8.—*Hydrometra*. Case reported by Dr. D. H. STORER.—The patient was a large and very fleshy woman, thirty-five years of age, and weighed about 230 pounds. In June, 1849, I saw her for the first time, and received the following history: that she had been married three times, and had borne five

children by her first husband, but none since. Previously to the last two years, she had suffered but little at her menstrual periods; but since then the pain at such times had been intense, and, not unfrequently, shreds of membrane had been expelled. The second night after her third marriage, about three months before the above date, she was attacked immediately after sexual intercourse with a profuse hæmoptysis; and this had repeatedly occurred upon any great effort, and generally during or immediately after connection. Had never raised blood before, never had suffered from pulmonary disease, and did not belong to a phthisical family.

For a few weeks past she had perceived a sensible swelling in the abdomen; thought herself to be pregnant, and insisted that she could distinguish the motions of the child, and that her sensations were precisely such as she had always experienced when in this situation. The catamenia, though diminished, occurred at each regular period. An examination of the abdomen was made through the dress, which, however unsatisfactory, determined me that she was not pregnant; and so I endeavoured to persuade her, but could not.

In January, more than six months after I first saw her, I was sent for, and found her in bed; complaining, as she expressed it, of all the symptoms which she formerly experienced, when pregnant, and anxiously expecting to be confined. Her abdomen was much distended; there was slight tenderness on deep pressure, and she still insisted that she felt the motions of the child. Upon examination of the abdomen, which was loaded with fat, I could detect no defined firm tumour; and I could hear no placental murmur, nor the sound of the foetal heart. The areolæ were darker, she said, than they ever had been in her former pregnancies; and milk was secreted by the breasts. The catamenia had continued to occur regularly since June, though scanty, and with great distress. Upon examination per vaginam, I found the neck of the uterus not obliterated; the body was enlarged, and yielded upon pressure, as if no solid substance was contained within it. I again told her that she was not pregnant; gave her a drastic purgative, which operated freely, and visited her for a day or two, during which she became more comfortable.

On the 12th of March, supposing herself to be pregnant, I was again sent for. I found it was a menstrual period, and that while she was suffering severe pain, about a quart of orange-coloured fluid suddenly flowed from the uterus, and she supposed the membranes had broken. About two gallons of this fluid escaped during the following week; after which it ceased for a week; and then, during a day and night, a quantity passed, which it was supposed would fill an ordinary water-pail. For the last week (April 8th) there has been no flowing. A catamenial period is now present, and the pain she has suffered for two years is absent; she experiences no inconvenience, has diminished much in size, and weighs about thirty pounds less than she did a week ago.

April 22.—Asphyxia from Carbonic Acid Gas.—Dr. WM. T. PARKER. Dr. P. was called at 6 A. M. to two female servants, found asphyxiated in their

sleeping room; mother and daughter. The daughter was in bed; and quite dead, though her body was still warm and flexible. The mother was found crouched down in the corner of the room, most remote from the bed, and under a window; entirely unconscious, and pulseless; extremities cold, pupils dilated and sensible, jaws firmly locked, countenance livid, lips pale; the only sign of life being a slight impulse of the heart felt by the hand. Cold water was dashed on her face and breast immediately, and caused slight respiration. The jaws were forced open, and some rum poured into her mouth excited a cough, and power of deglutition. Large sinapisms were applied to the extremities, friction was used, and hot brandy and water with infusion of capsicum was administered. This treatment was continued with a prospect of success till 7 A. M., when the coldness seemed to increase, the respiration was less distinct, the trifling pulse which had begun to be felt was marked by subsultus, general spasms seemed to be commencing, and the abdomen, which was at first of natural size, became greatly swollen; not the least indication of consciousness had then appeared. Venesection 3vj . The blood seemed very fluid, and respiration became more free, but symptoms of sinking made it necessary to tie up the arm. A stimulating enema was now given, causing free vomiting with easier respiration, and a thorough alvine evacuation. The sinapisms were renewed, and cold water freely poured on the head. This treatment was continued perseveringly for three hours, the least relaxation of effort causing a return of bad symptoms. At $9\frac{1}{2}$ A. M. the pupils gave indications of sensibility, and the pulse could be felt. At 10 o'clock, she could hear, the swelling of the abdomen was gone, and respiration was regular. At 12 o'clock, she recognized persons, and during the day she gradually recovered.

The cause of this accident was carbonic acid gas, which escaped from a joint in a furnace flue, which passed through their room (a basement) to the chimney; their bed being directly under the leak, so that the gas was poured directly upon the two women, as water would have been from a spout. The daughter was found turned upon her face, which was very dark from the settling of the blood. Copious epistaxis had occurred, and the bladder had been evacuated; there was no protrusion of the tongue, but a slight contraction of the brow, and post-mortem rigidity soon became strongly marked.

They went to bed at 9 P. M., and the mother remembers that, soon afterwards, her daughter complained of headache, and "a smell of gas," and that she rose and closed the door.

May 13.—Excision of the Horizontal part of the Lower Jaw for Malignant Disease. Reported by Dr. J. MASON WARREN.—The patient was a healthy boy, fifteen years old, with no hereditary tendency to malignant disease, so far as could be ascertained. Two years and a half since, a small red fungous

tumour made its appearance between the middle incisor teeth of lower jaw. This tumour gradually increased, separating the teeth, and finally involved the whole depth of the bone. At the time of the operation the lip was much pressed outwards, and the cavity of the mouth so encroached upon as materially to embarrass the speech and prevent mastication.

The disease was removed by making an incision through the lip in the median line, and extending it as far as the os hyoides. The soft parts being dissected from the bone, this was partly sawed through by means of a metacarpal saw, the second bicuspid tooth on either side being removed. The incision through the bone was completed with cutting forceps.

Before separating the attachments between the jaw and the tongue, a ligature was passed through the mucous membrane at the base of that organ, in order to prevent retraction, an accident that Dr. W. had seen happen in an operation similar to the present, the patient being saved from suffocation by the surgeon thrusting his finger down the throat, hooking up the tongue, and securing it by a ligature.

In the present instance, there was no disposition in the tongue to retract, but, for the sake of precaution, the ligature was passed through the wound, and formed one of the sutures which confined the edges of the lip when they were approximated.

The portions of jaw removed show the whole bony structure much expanded and enlarged. On the alveolar edge one bicuspid tooth remained on each side. On the left side two incisors. The right incisor teeth had disappeared. The right cuspidatus was found deeply buried in the jaw, lying diagonally across the root of the bicuspid nerve, having come to the surface. From the expansion of the jaw by the disease, nearly two inches existed between the bicuspid tooth of the right side and the incisor of the left.

A small portion of the expanded shell of the bone being cut away from the internal face of the jaw, exposed a fungoid mass filling the interior. This, on being submitted to microscopic examination, presented well-marked cancer-cells.

The disease was limited by the bone, the soft parts in the vicinity exhibiting no marks of disease.*

May 27.—Imperforate Anus in a Pig. Opening from the Rectum into the Urethra.—Dr. JACKSON exhibited the specimen sent to the Society by Dr. Wm. J. Burnett, with the following history. The subject was a male, one of a litter of eight or ten, and was killed when twenty-six days old, having suffered no inconvenience from the malformation, so far as was known. The

* This patient left the hospital two weeks after the operation, quite well. The lateral portions of jaw had been but little drawn together, and could be approximated with the upper jaw so as to allow of the mastication of moderately hard substances.

parts having been removed by Dr. B., there is seen to be no appearance of anus, and the rectum, moderately enlarged, terminates near the surface in a cul-de-sac. The intestine having been inflated and tied, the urethra was cut open; and between one and two inches from the bladder the opening from the rectum is seen, perfectly well marked upon the urethral surface, and yet so small beneath it that the air could not readily be forced through. Externally, the communication appeared as a short, dense, rounded cord, half an inch or more from the extremity of the intestine.

One of the other pigs in the same litter had been killed four days before, having the anus imperforate, and the abdomen somewhat distended, though otherwise it appeared well; no examination was made of the urethra. The rest were well-formed. In a former litter, however, one of the number was reported to have had a common outlet for the rectum and vagina; showing the same tendency to the reproduction of monstrosities at different births that is often seen in the human subject.

Dr. J. alluded to an observation that he had made in the printed catalogue of the Society's Cabinet, that in every one of six cases of imperforate anus in the male (human) subject that he had examined, an opening had been found from the rectum into the urethra; also to a case of Dr. York's, of which he published an account last April in the *Boston Med. and Surg. Journal*, and in which, after an operation by Dr. Y., the child lived eighteen months, the feces passing altogether through the opening into the urethra for the last two months.

May 27.—Enchondroma of first phalanx of Middle Finger.—Dr. J. MASON WARREN exhibited a cast of the hand, and showed the tumour. The subject of the disease was a little girl thirteen years old. When two years of age, a small hard swelling appeared on the inner side of the first phalanx of middle finger. This slowly increased, producing no inconvenience except from its size, which more or less interfered with the motion of the hand.

At the time of the operation the tumour was the size of a small apple, involving the whole bone of the first phalanx and part of the second. The finger was forced out of its place and lay diagonally across the little or ring finger. A small tumour of similar description occupied the lower phalanx of the forefinger, and one also, a still smaller one, on the ring finger, lying under and concealed by the larger tumour.

The finger was easily removed. The head of the metacarpal bone sawed off to allow of the necessary approximation of the edges of the wound. A section of the excised part shows a uniform appearance like the interior of a ripe apple. The periphery was somewhat elastic, like the more delicate layer of bone or cartilage. A few spiculæ of bone were interspersed through the interior. The shaft of the bone had disappeared. The metacarpal extremity remained.

May 27.—*Erysipelas following Vaccination.*—This complication does not seem to have been observed here before the present season as a grave form of disease. Of late, however, cases have multiplied to such an extent, and the result has been so often fatal, that many members of the society have refused to vaccinate except when it has been absolutely necessary, and have almost wholly given up re-vaccination. Erysipelas, as appears by our records, has been quite prevalent during the past winter and spring; and small-pox was probably never known to exist here as it has during this same period. The following cases were reported:—

I. Case reported by Dr. J. B. S. JACKSON.—An infant six months old was subject to intertrigo. The vaccine vesicle was rather imperfect; and on the seventh day erysipelas appeared in its neighbourhood, gradually extending over the whole extremity, and somewhat to the trunk, but not to the head. Slight vesication followed, and an abscess threatened in the hand; one actually forming in the axilla. The constitutional symptoms were, for a time, quite severe, but the child recovered in about a month.

In common erysipelas, the same part is not often affected a second time, but here there was a recurrence of the inflammation not only once but twice after it had fairly subsided.

II. Case also reported by Dr. JACKSON.—An old man of rather bad habits having been revaccinated, the whole forearm became erysipelatous with some vesication, but in a few days was quite well.

III. Case reported by Dr. CABOT.—This being a case rather of diffuse cellular inflammation than common erysipelas. The patient was a gentleman, sixty-nine years of age, who, having been exposed to varioloid, was revaccinated in two places on the 3d of April. On the second day, two vesicles had formed about the size of a small pin's head, and there was pain in the axilla, with pain and soreness under the pectoral muscle. On the third day, the vesicles had become larger and pustular, and an areola had formed. This last extended up and down the arm, and when it got to some distance from the points of vaccination, assumed the character of a deep erysipelas; the pain during this time being chiefly under the pectoral muscles. In about two weeks the inflammation had extended to the hand, and in the course of the third week an opening was made about the elbow, from which a considerable quantity of sero-purulent fluid was discharged; the back of the hand being opened down to the fascia a few days afterwards. From the shoulder the erysipelas extended over the whole back, down the right arm to the elbow, and somewhat over the abdomen from each side; also across the front of the chest, nearly to the right shoulder. The whole duration of the erysipelas in an active form was about seven or eight weeks; neither the head nor lower extremities were affected; the areola about the vaccine points subsided, but subsequently this surface was attacked with the disease. The suppuration about the left shoulder and down the upper extremity has been very exten-

sive; the pectoral muscle was separated from the parietes of the chest, and the skin of the forearm was so detracted from the subjacent parts that fluids thrown in at the elbow would pass out at the back of the hand; very numerous openings have been made about the elbow and shoulder for the discharge of pus. For about two months the patient was confined to his bed, but for the last six or eight weeks he has been fairly convalescent, so that for some time past he has been able to ride out daily. The prostration was not so great as would have been expected in such a case; the pulse not rising above ninety during the active stage of the inflammation; there was, however, some delirium, with chills, headache and pain in the back. No suppuration occurred, except in the parts above alluded to. Amongst the remedies used in this case, the application to the surface of the tincture of iodine seemed to be beneficial, and, still more, the injection into the cavities of this same substance; at first largely diluted with water, but afterwards increased in strength to the proportion of equal parts; the filling up of the cavity in the forearm and the restorative process altogether being much accelerated under this treatment, and without any unpleasant consequences. This treatment was adopted at the suggestion of Dr. S. Parkman.

IV. Case reported by Dr. J. BIGELOW.—The patient was a gentleman, about thirty years of age, and having been exposed to the small-pox, was revaccinated with several others, from the same virus. Two days afterwards, an erysipelatous spot, of the size of a dollar, was discovered around the point of vaccination. This spread rapidly in every direction, and at the end of five days, had occupied the whole arm from the shoulder to the elbow. At this time, several dark spots appeared upon the inside of the arm, which in two days were perfectly gangrenous, so that an incision was made five inches in length, without pain. The slough was apparently confined to the skin and cellular substance, inasmuch as the muscular power was at no time lost. Meanwhile the pulse was quick, and the skin hot, with prostration, headache and delirium. In another week, the erysipelas had extended to the whole trunk, half way down the thighs, and to the wrist of the affected arm; the patient being much of the time delirious, or somnolent, and with a pulse of 120. During the third week, the symptoms were generally aggravated, and the cerebral affection increased; there was also a retention of urine, and the catheter was required for a fortnight. During this time, however, the slough gradually separated, leaving a large, deep ulcer. The patient became convalescent at the end of a month, and slowly recovered; the ulcer requiring another month or more to cicatrize. No other slough formed, excepting two small ones upon the lower part of the back. No other person, who was vaccinated with the same virus, had any unusual symptoms; but a lady of the family, about seven weeks after the vaccination, was attacked with inflammation of the fauces, and tonsils, followed by prostration and delirium, and died in a week; during her sickness, a livid spot, about two inches in

diameter, appeared over the upper part of the sternum, but this disappeared before death.

V. This was a case, also reported by Dr. BIGELOW, that occurred soon afterwards. A healthy child, about five months old was vaccinated, and the vesicle went on well till the eighth day, when matter was taken with which three others were vaccinated. On the ninth day, the arm became erysipelatous, the inflammation rapidly spreading over the whole trunk; and the child died in a few days. All of the patients inoculated from this arm had a perfect vesicle, and without any anomalous symptom.

These two cases were considered by Dr. Bigelow, as conclusive against the transmission of erysipelas by vaccination.

VI. Case reported by Dr. HOMANS.—The patient was a healthy infant, about three weeks old. On the eighth day, the vesicle appeared well, and matter was taken with which other children were vaccinated, the result being in every case successful. On the tenth day, erysipelas appeared below the elbow, and extended into the axilla; the swelling and redness were very defined, and the inflammation spread rather more rapidly than is usual in the adult. Vomiting and diarrhoea came on, and lasted for some days; and the pulse was too quick to be counted. The head and abdomen then became affected, and on the ninth day from the invasion of the disease, the scrotum and penis were greatly swollen; these last were punctured with much relief, but a deep sloughing of the scrotum took place, one and a half inches in diameter, and nearly exposing the testicles. The extremities were next affected, but in the meantime the child began to improve, and the pulse had fallen to 120. On the subsidence of the disease, abscesses formed upon the body and limbs beneath the surface, and about the left hip, one that was quite large and deep. This last, is the only one that now remains open, and the child is fairly convalescent, after a sickness of about three months.

Dr. Homans also alluded to the case of two lads, in whom the erysipelas was followed by extensive suppuration in the axilla; one of them having been vaccinated, and the other re-vaccinated.

VII. Dr. PUTNAM reported a case, in which erysipelas attacked the scalp on the fourth day after vaccination; the patient was a healthy infant, and the inflammation never extended beyond the part first affected; there was little constitutional affection, and the duration of the disease was about a week.

VIII. Dr. CHANNING mentioned a case of erysipelas, after vaccination, in which the shoulder, axilla and pectoral muscle were involved. Obscure disease within the chest, carried off the child. There was no vesication from the erysipelas. The scar of vaccination was morbid. Dr. C. had noticed several such cases, in which the vaccine disease was irregular and unnatural in its course and appearances. He declines vaccinating, and especially re-vaccinating.

It appears from the records of the Society that a fatal case of erysipelas,

following re-vaccination, was reported by the late Dr. Greene, as having occurred in January, 1846. The patient, a gentleman sixty-six years of age, had been vaccinated twenty years before, and re-vaccinated, though without success, two or three times since. On Friday, the day after the re-vaccination by Dr. G., he was seized with chills, nausea and a sense of general uneasiness; and, at the same time, inflammation commenced in the arm, attended with heat, redness, and pain. He slept none on the following night, and on the next night was attacked with vomiting and purging. The symptoms from this time did not become materially worse, however, till the following Wednesday, when he complained of pain just below the elbow; and on Thursday, a small patch of erysipelas was discovered at this point, which gradually extended over the arm and chest of the affected side, the infiltration of the cellular tissue, keeping about two inches ahead of the redness. He died at ten on Friday evening, a little more than eight days from the time of re-vaccination, the erysipelas having extended to within two inches of the sternum.

In regard to the quality of the matter introduced, Dr. G. remarked that it was taken on the eighth day from a perfectly formed vesicle on the arm of a perfectly healthy infant, born of healthy parents; that one of his own children had been re-vaccinated with the same matter, and also another person, in both of which cases, the symptoms and appearances were slight. Dr. Greene alluded to several other cases, in which unusual redness and pain had followed re-vaccination, but which differed in appearance from erysipelas. Dr. Warren stated at that time that he had seen one case of erysipelas following chicken-pox.

May 27.—Labour, with almost complete closure of the Vagina. Case reported by Dr. PUTNAM.—A healthy woman, aged thirty, was married at seventeen, never having menstruated. Two years after marriage had a swelling in the vagina, which was punctured by a surgeon, and a quantity of tarry-looking fluid discharged.

About two years ago, a large "lump" formed in the abdomen, causing an enlargement as at the sixth month of pregnancy. There were also headache, constant flush of the face, and dysuria. This enlargement had lasted six months, when she began to discharge from the vagina a thick, dark-coloured fluid resembling that evacuated ten years before. Within a week, the abdomen was reduced to the natural size, the discharge continued for three weeks, and afterward she menstruated regularly until she became pregnant.

On the access of labour there was found an obstruction in the vagina, and on the 10th I was asked to see her. She had been for some hours in active labour. On examination, the vagina, within an inch of the external organs, was closed by a strong, somewhat yielding membrane. No perforation could be detected, though sought for. We decided to do nothing, but await the progress of the labour.

In four hours violent pain came on—the septum was distended, and protruded beyond the external organs. Under this tension three small holes were visible, just sufficient to admit the head of a probe, and about one-fourth of an inch apart. A bistoury was then introduced, and the three holes laid into one. The thickness of the septum was found to be about two lines. A gush of liquor amnii succeeded, and in half an hour the head came down, and the child was born living.

Coition had from the first been painful, and for the last two years excessively so. The husband had not been aware of any impediment until within the last two years. I presume, however, that the malformation was congenital.

May 27.—Granulated Liver, Jaundice, and Hemorrhage. Case reported by Dr. JACKSON.—The patient, a labouring Irishman, twenty-five years of age, entered the hospital on the 21st of May, and died in the course of the following night. For about a year his skin had been deeply yellow, and the urine, he said, looked like blood, his previous health having been good; dejections variable, but sometimes yellow. For about nine months he had frequently bled from the nose and gums, and often to the amount of a pint. Continued to work till seven weeks before admission; and had kept his bed for the last ten days, having had some cough, and pain in chest. When seen, his pulse was 84, quite irregular, and almost imperceptibly small; skin cool; general appearance of prostration, but much less than the pulse would indicate; some diarrhoea, but no other marked local symptom; no mention, no appearance, of dyspnoea.

On dissection, the tissues were found deeply coloured by bile; some serous effusion in the peritoneal and two pleural cavities, with œdema of surface; some effusion of blood in lower extremities, and beneath the peritoneum. The blood was so thin as to run like water from the veins when they were divided; but it was not very pale, though more so than usual; careful search was made for coagula in the cavities of the heart and large vessels, but scarcely a trace could be found. The cavity of the pericardium contained three pints of blood similar to that just described; and upon the surface of the heart was a deposit of fibrin, which was evidently the result of inflammation. The granulated structure of the liver was very strongly marked, and this organ, which was shown, was of a deep grass-green colour throughout—showing the inapplicability of the term cirrhosis. Spleen enlarged as it often is with this disease of the liver; weight fourteen ounces.

Dr. Jackson remarked upon the fluid state of the blood, and as a consequence, the frequent occurrence of hemorrhage, in cases of jaundice, whether disease of the liver existed or not; this change in the quality of the blood being probably due to the alkaline property of the bile. He also alluded to a case that he saw with Dr. Gordon a few months ago; the patient died from

hæmatemesis, having had jaundice for some weeks, with hemorrhage into the integuments, and from some of the internal organs.

June 10.—Hemorrhage from the Urethra. Case reported by Dr. RUSSELL.—The patient was a gentleman about the middle period of life, and the father of several children. Having been absent upon a journey for two or three days, he returned home late in the evening, and immediately after sexual intercourse the hemorrhage occurred, amounting to a pint, so far as could be estimated. The excitement was no more than usual, and he had never before experienced such an effect. For two or three days he was left quite feeble, but with no signs of local irritation.

June 24.—Tumour within the Orbit. Case reported by Dr. HOOPER.—A young man, twenty years of age, was first seen by Dr. H. last October. The left eye was then protruded apparently by a tumour behind it; the vision was scarcely impaired, and there was no pain except on taking cold. The protrusion began three years before after a severe cold, and increased gradually for eighteen months, but had been about stationary for the last six. In November, he left the Infirmary, not relieved; and on the 7th of last June was re-admitted. The eye was then enormously protruded, and there was added to this a mass of chemosis, which gave the patient a frightful appearance. There was also pain, with entire loss of vision. The organ having been removed, he was discharged on the 25th of June, doing well.

On examination, the eye itself appears sufficiently healthy. The tumour, which was situated deep in the orbit, and was divided by Dr. H. in removing the mass, is loosely connected with the globe of the eye, about equal in size to the globe itself, well defined, of rather a soft fleshy consistence, and presenting a uniform partially organized appearance; and on microscopical examination, proved to be malignant.

June 24.—Malignant Growth within the Globe of the Eye. Case reported by Dr. HOOPER.—Mrs. ——— æt. about thirty-five; woman of feeble health; married several years; has had no children; has suffered during the last two years from constant uneasiness and occasional severe pain in right eye. When first seen two years ago there was complete loss of vision, the sclerotica bulging out at the upper and inner part; injection of conjunctiva; cornea transparent. During the two years, pain has been severe at times, but relieved by leeches to temple, and by puncturing the globe at the place of protrusion; a straw-coloured fluid followed the puncture until within the last few weeks, when no fluid has escaped, and there has been no relief from the patient's suffering, which is excessive.

To-day, the patient being under the influence of sulphuric ether, I removed the eye. Very little hemorrhage occurred. No dressing but a compress wet in cold water laid on the eyelids *July 1.* The patient has been comfortable

ever since the operation ; is now down stairs. *July 31.* Patient still doing well as far as the seat of disease in orbit is concerned, but has had some disease in the abdominal region.

On examination, the eye is moderately enlarged ; the bulging above noticed being quite marked. Cavity of the sclerotic about two-thirds filled by a nearly uniform, whitish, soft solid, well-defined substance, which the microscope shows unequivocally to be carcinomatous. The remainder of the cavity is free ; and the different tissues, where not involved in the disease, appear to be healthy. The sclerotic, also, so far as seen in a single incision appears healthy ; and to some extent the choroid coat can be traced between it and the diseased mass.

June 24.—Dislocation of Femur reduced on Sixty-eighth day, by Jarvis' Surgical Adjuster. Case reported by Dr. JOSIAH CROSBY, of Manchester, N. H.—On the 16th of January, 1849, Mr. P. of W., N. H., aged fifty-six, muscular, weighing about 180 pounds, of intemperate habits, was thrown from a sleigh and dislocated the left hip. Six weeks passed before the nature of the injury was understood, and more than three weeks afterwards before any attempt was made to reduce it.

On the sixty-eighth day of the dislocation, I saw the patient for the first time—found him lying in bed with all the diagnostic signs of dislocation of the head of the femur upwards and backwards ; limbs, below the natural temperature, purple, œdematous, and shortened from three to four inches. Although the case seemed almost hopeless, it was agreed that an effort at reduction should be made, and *Jarvis' Adjuster* was accordingly applied. Before extension was commenced, an attempt was made to bring the patient under the influence of chloroform, but it was soon abandoned on account of violent spasms which were produced by it, and the operation was done without the aid of this powerful agent. The extension was continued, gradually increasing the power, for nearly twenty-four hours, when by a little rotation of the limb, the head of the bone was brought into the socket with a snap audible to the bystanders.

The hand of an assistant was placed on the trochanter while flexion and slight rotation were given to the limb, to see if the leg would remain at full length and in the right position. Everything proving satisfactory, the patient was laid in bed, and a bandage applied about the hips to guard against accidents from motion.

Dr. C. remarked that in the report on Surgery to the National Medical Association for 1849, the chairman of that committee gives an unfavourable opinion for himself and Prof. Pope of the St. Louis University, in regard to the "Adjuster," but that no statistics were given on which this opinion is founded. He was of opinion that an instrument of so much power and of so varied application deserves a fair trial, and that by this test its character should be fixed.

July 8.—New Operation in cases of Effusion into the Cavity of the Chest.—

Dr. BOWDITCH regretted that the lateness of the hour would prevent him from giving a detailed account of some cases that he had seen, where very excellent results had followed upon the puncture of the chest in which large effusions existed. He would, however, show an instrument which he had had made after the model of one used by Dr. Morrill Wyman, of Cambridge. It consisted simply of a brass suction-pump, arranged without valves after the stop-cock fashion. There were two apertures, one for suction and the other for a discharge pipe, and by turning the piston pipe ninety degrees, one or the other of these apertures was opened. An exploring canula was arranged so as to fit tightly into the suction aperture; and having been introduced into the chest, the suction could be applied immediately, and all the fluid usually discharged, without any change of the apparatus, save the turning of the piston-pipe, above described, in order to discharge the fluid when the barrel was full.

Dr. B. had seen the operation performed five times during the last three months. All the patients were immediately more or less relieved, two had tubercles at the time, one of whom has since died. Two cases were perfectly successful, the patients being, at the time of the operation, very ill, with pulse over 120, night sweats, &c. One recently operated on with the greatest relief was still under treatment. Finally, he knew of one case treated by Dr. Wyman, who is now well, and who undoubtedly would have died had the operation not been performed.

The pain of this operation is, comparatively speaking, nothing, and the patients are generally not at all troubled by it. The wound, of course, closes instantly on the removal of the canula, and no air can enter the chest while the apparatus is in operation.

Dr. Bowditch concluded by remarking that operations had been done from time immemorial, upon the chest in cases of effusion, but he believed that they were generally considered as a last resort. In Guy's Hospital Reports, cases are given of the use of the trocar, but Dr. B. believed that to Dr. Wyman was due the credit of having first proposed the use of the *exploring canula with suction applied thereto*.

Dr. Bowditch has arrived at the following conclusions:—

1st. The operation is perfectly simple, but slightly painful, and can be done with ease upon any patient in however advanced a stage of disease.

2dly. It should be performed forthwith in *all* cases in which there is a complete filling up of one side of the chest.

3dly. Dr. B. had determined to use it in *any* case of even *moderate* effusion lasting more than a few weeks, and in which there should seem to be an indisposition to yield to the ordinary modes of treatment.

4thly. Dr. B. would urge the practice of puncturing in this way upon the medical profession as a *very important measure in practical medicine*; for he believed that, by this method, death may be frequently prevented from ensu-

ing either from sudden attacks of dyspnœa or subsequent phthisis, or, finally, as in two cases he had seen, from the gradual wearing out of the powers of life from inability to absorb the fluid, even when all the organs, save the pleura of the affected side, were healthy.

5thly. Dr. B. was likewise inclined to the belief that this operation if generally adopted would sometimes prevent the occurrence of those very tedious cases of spontaneous evacuation of purulent fluid, and those great contractions of the chest that occur after long-continued effusion and the subsequent discharge or absorption of a fluid.

July 22.—Contraction of the Fauces, the result of Old Ulceration.—Specimen sent to the Society by Dr. J. S. JONES, and exhibited by Dr. JACKSON, who gave the following history of the case.

The patient, an Irishwoman, aged 37 years, entered the Massachusetts General Hospital, on the seventh of June, with what appeared to be a syphilitic ulceration upon the leg; which having cicatrized, she was discharged on the 12th of July.

Five years ago, she was attacked with ulceration, which destroyed the greater part of the soft palate and tonsils; this having only recently cicatrized, and being still liable to break out. Denied any syphilitic taint, and could assign no cause for the disease; her health having previously been good. Appetite good, and she was well nourished; took solid food as well as liquid, and was no longer at the table than the other patients. Had no difficulty of deglutition, though she would sometimes choke when asleep. Breathing at all times somewhat laboured, and more or less stertorous; particularly on exertion. Voice sufficiently loud, and not hoarse, though hollow and peculiar; when about to speak, she would take in a full inspiration, and speak as long as she expired.

Patient died five or six days after leaving the hospital, in consequence of brutal treatment, which she had received from her husband; and, on dissection, there was found acute pneumonia, but no other disease except about the throat.

The contraction is such, that a large catheter would hardly pass from the mouth into the pharynx; the parts being thickened and condensed, but perfectly cicatrized. The remains of the soft palate on each side, and the whole of the epiglottis, so far as can be seen without cutting the stricture entirely through, are closely and strongly adherent to the base of the tongue. The rima glottidis also adheres extensively to the pharynx; and what should be a mere indentation between the two lips of the glottis, has come, by the traction that has been exercised upon the parts, to be a long and deep fissure.

One other case of similar contraction of the fauces may be seen in the Cabinet of the Society.

July 22.—Neuralgia of 18 years' standing cured by an operation. Case reported by Dr. BUCKMINSTER BROWN.—Mrs. R. had suffered for eighteen years from pain and tenderness of the thumb of the left hand. She could not trace it to any injury. About a year previous to my seeing her, she had had a severe labour, and had miscarried at the eighth month. From that time, the pain and tenderness had increased to an alarming degree.

The tenderness of the part above the second joint was at this time exquisite, and the pain was extreme both night and day, with but rare and irregular intermissions. It commenced in the neighbourhood of the internal corner of the root of the nail, and extended up the side of the thumb, through the hand up the arm to the shoulder, and terminated in the back of the neck, and was reflected on to the breast. If the thumb received an accidental knock, the whole arm would be convulsed, and the pain become so intense as to produce faintness. During these paroxysms, she described the arm as assuming a blue appearance.

On examining the thumb, I found it somewhat swollen, and a slight degree of blueness around and beneath the nail, and that in addition to the excessive tenderness of the thumb, there was a considerable degree of soreness along the course of the median nerve. There was no marked tenderness of any of the dorsal or cervical vertebrae. Thinking, however, that it was possible the difficulty arose from some irritation or inflammation about the roots of the nerves, the treatment was commenced by applying a blister to the spine, at the point indicated. This was kept open with an irritating ointment, and sprinkled every second night with sulph. morph., and a cathartic was given every second day. About the same time, she took carb. ferri two or three times a-day.

For two or three days after commencing this treatment, the pain in the arm was increased. Antimonial ointment was rubbed along the course of the nerve. The tenderness in the arm gradually decreased, but continued about the same in the thumb. Leeches were now applied to the dorsal region which afforded very considerable temporary relief.

The pain and tenderness, however, returning to its fullest extent, a blister was applied to the thumb itself, entirely enveloping it, and this when dressed, was sprinkled with morphia. A small abscess formed on one side of the thumb; this was opened and touched on its internal surface with lunar caustic.

The thumb was now decidedly less sensitive. During treatment, she took extract of conium, in gradually increasing doses, but without any essential improvement in the symptoms. As the dead skin peeled off, and the new formed, the sensitiveness returned, and the pain became as severe as ever.

As the list of remedies from which I thought there was any chance of deriving benefit was now about exhausted, I decided to excise a portion of the internal digital nerve of the thumb, as it was in the ramifications of this nerve around the root of the nail and side of the thumb that the disease

appeared to be seated. This was done December 18th, with the assistance of Drs. J. M. Warren and Morland.

The patient being etherized, an incision was made from the internal metatarsal head of the first phalanx of the thumb, to the internal tuberosity of the phalanx, about one inch and a third in length. A dissection was then made to the bone, and without much difficulty the nerve was seized, and a piece about one inch and one-third in length was removed. The thumb had always been so exquisitely sensitive that I had never been able to make a satisfactory examination until she was under the influence of ether. The next day, the extremity of the thumb was still very painful and sensitive; but there was no pain or tenderness below the place operated upon, or down that side of the thumb, which before had been the spot the most painful and susceptible. So far as this branch was concerned, the operation was of course successful. The relief, however, was not so complete as had been hoped, and a considerable degree of pain and susceptibility still continuing through the winter, another operation was decided upon. The patient being again etherized, a puncture was made above the most sensitive spot just clearing the joint. A long thin knife was then introduced anteriorly and posteriorly, and all the parts from the skin to the bone thoroughly divided; thus semi-girdling the thumb, another puncture was made on the other side, and the same operation repeated.

March 13th. The last operation has been attended with complete success. The extremity of the thumb below the incision, that is, below the second joint, is perfectly numb, and there is no pain in the thumb or hand.

April 16th. Mrs. R. has had no return of pain in the thumb or hand, and all that remains to remind her of eighteen years of suffering is a slight shooting pain across the chest at distant intervals, on exposure to cold, &c.

A case somewhat similar to the above is on record, in which the disease was also in the thumb, and was the consequence of a puncture from a shoemaker's awl. In this case, the diseased nerve was cut down upon, and a small tubercle (neuroma) was found and removed with the nerve, to which it was attached, and of which it formed a part. The operation was attended with success. In the case above related, no tubercle was discovered. Previous to the last-mentioned operation upon Mrs. R., I was not aware that this method of operating, by destroying all the nerves that go to a part, had ever been followed. I have since learned that Dr. J. C. Warren had many years before operated in a similar manner, and with a like successful result.

ART. III.—*Hints on the Treatment of Lacerated Perineum from Parturition.*

By W. E. HORNER, M. D., Professor of Anatomy in the University of Pennsylvania; Senior Surgeon of the St. Joseph's Hospital, Philadelphia.

IN the year 1837, in a report of a tour of duty in the Philadelphia Almshouse Hospital, (see the *American Journal of Medical Sciences* for November of that year,) I offered a suggestion, founded on a case of lacerated perineum from parturition, of the propriety of dividing the sphincter ani muscle, where reunion was attempted in old cases. Owing to the intractable spirit of the patient, the experiment was defectively tried; but I remained disposed to make another trial of it upon a suitable occasion.

In October, 1848, I assumed the charge of a young married lady after her second accouchement, the accident under consideration having occurred in the first. The laceration was complete from vulva to anus; the parts were cicatrized over an inch or more deep, and but one fissure was apparent from near the os coccygis to the clitoris. The patient, of rather a full habit, and well organized in other respects, was rendered miserable and helpless by a constant tendency to diarrhœa, only to be restrained by the incessant use of opiates; and her life was unavoidably retired owing to her want of control over her natural discharges. Much of the fecal matter passed forward through the rima vulvæ, which added to the distress of her situation.

The operation was performed in the usual way, by paring off the cicatrix of each margin of the perineum, and then fastening it carefully with interrupted stitches along the rectal and along the vaginal edges of the cut; and, to secure more fully the permanency of contact, the sphincter ani muscle was divided on each side of the anus. Unfortunately, the menstrual flux came on prematurely; and it, with the natural discharges of the vagina, loosened everything like adhesion. The operation was a failure, though the bowels had been kept unopened for many days, so that no counteraction from fecal discharges had occurred.

This lady, with true feminine spirit and perseverance, not discouraged by the want of success, insisted on another trial, and, after a series of postponements for various reasons, I operated a second time, January 28, 1850, just fifteen months after the first trial. I need scarcely say that in the interval of the two operations her life had been of the same wretched kind as previously. I had now of course additional difficulties. The portion of perineum pared away in the former instance had reduced its extent; the slit from vagina into rectum had been elongated or deepened. If lateral adhesion had failed before, the failure now was still more probable. Under these considerations, I determined to modify the operation, so that if unsuccessful the patient should at least not be the worse off for my attempt. The following plan was accordingly arranged. Two flaps to be made from the perineum and adjoin-

ing part of the vulva, the one on the right of the patient and the other on the left, as follows:—

Fig. 1.

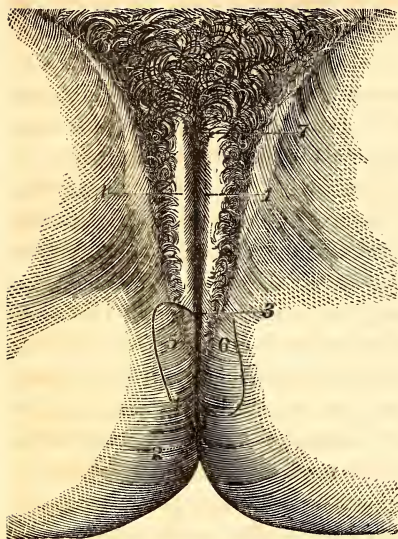


Fig. 1.

- 1, 1. Vulva.
- 2. Anus.
- 3, 4. Lacerated perineum.
- 5. Right flap.
- 6. Left flap.
- 7. Clitoris.

Fig. 2.

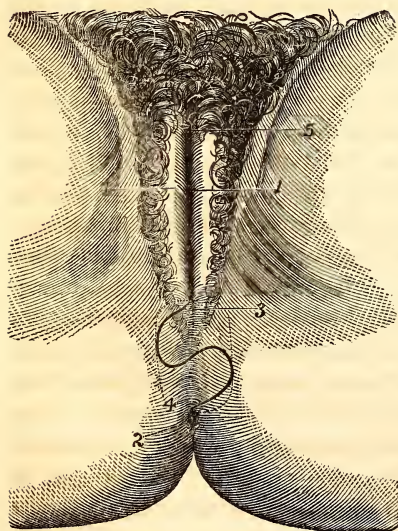


Fig. 2.

- 1, 1. Vulva.
- 2. Anus.
- 3. Upper or left flap.
- 4. Lower or right flap.
- 5. Clitoris.

If, according to these figures, the base of the right flap be placed below, and the base of the left flap above, upon crossing the two flaps a partition will be formed between the rectum and vulva; there will be no loss of substance; the free side of the right flap will form the upper part of the rectum, and the free

side of the left the lower part of the vagina; and interrupted stitches along the rectum and along the vagina will secure the approximation of the flaps, and the contiguity of their raw surfaces.

In accordance with this plan, the operation was performed; the patient, as in the former instance, being under the influence of a mixture of chloroform and of ether. The right flap was fully and satisfactorily made. The left flap, owing to a sudden contraction, its transverse part being first made, was not as desired, but fell short of my intentions. The parts were adjusted and fixed with stitches. For the first ten days or so there was a strong indication of success. A large firm stool having then occurred, upon examining whether injury had been done, I found that either from it or from indisposition to unite the flaps had not adhered. But it pleased me much to see that they were in situ, so that the partition was kept up between the rectum and the vagina. The ligatures having all been detached, I found in a month after the operation that the left flap had shrivelled away almost to nothing; the right flap had lost one-half of its first size, but it still remained as a barrier between the two canals; and, with a linen compress introduced into the vagina and laid upon it so as to keep the flap in place, the discharge of feces was regulated, so that there was no diarrhœa, and no medicine was necessary to prevent it. The patient felt the call for defecation, could make timely provision for it, and was so much improved in her comfort that she considered herself a different being.

At this date, July 15th, 1850, on an examination of my patient, I find that things are improved very much. The appearance of an operation having been done has subsided, so that upon a superficial examination there appears to be a regular division between the anus and the vulva, a reproduction of perineum. The latter is, however, actually only the claustrum made by the operation; the edge of it is still loose, but yet it has the effect of directing the rectal discharges backwards, and the vaginal forwards. The recto-vaginal fissure has diminished much in depth, and the comfort of the patient has been vastly augmented. From having been for a long time in an absolutely helpless state, she began to participate in her house-work, and continued to do so until lately, when her diarrhœa was unfortunately reproduced by a visit to a region of limestone water. But with this disadvantage she says her feelings are more natural, and that she has a much better control of flatulent and fecal discharges than formerly, and is apprized of their approach. It yet remains to try whether, by a protracted application of the milder escharotics to the free edge of the new claustrum, a perfect adhesion of it may not be obtained. As the duration and success of this process are uncertain, the result may possibly be the subject of a future report.

It is sufficiently known that lacerations of the perineum in the female are easily treated when recent; after cicatrization, all candid writers view them as very serious and very intractable. If the preceding narrative should induce others to imitate this plan of operating, I would recommend the ver-

tical incisions of the flaps to be first made, as the relaxation of the tension of the parts affects much the state of the flap where the transverse cut is first made, and interferes with the plan of the operation. This is a matter of pure experience which had not entered into my first estimate of difficulties.

ART. IV.—*Notes of Cases treated at the Poor House of Westchester County, State of New York.* By JAMES D. TRASK, one of the Physicians to that Institution.

THOUGH the medical records of a county poor house must almost necessarily be imperfect, I find among my notes not a few cases of considerable interest. But, before submitting an account of some of these, it will be necessary to allude to certain local circumstances, having a most important influence on the results of medical treatment in the poor house of this county.

This establishment is situated in the town of Mount Pleasant, about thirty miles north from the city of New York, and about two miles east from the Hudson River. Its location is unfortunate for such an institution, as it lies in a basin formed by hills on all sides, within ten or twelve rods of a small stream, called the Sawmill River. Immediately in front of the buildings stands a small grove of trees; and in the rear, a range of barns and other out-buildings, by which the free circulation of air in and around the buildings, is seriously impeded. In fact, the spot seems to have been selected chiefly with an eye to the convenience afforded to domestic purposes, by its proximity to the river.

The number of inmates varies from one hundred and fifty in the summer, to over three hundred in the winter. Only a small proportion are Americans by birth, much the largest portion being emigrants from Ireland, constituting a transient population. The permanent inmates are the aged, decrepit poor of the county, those reduced to abject poverty by vice and misfortune, with their children, and insane paupers who are placed in an asylum erected for their accommodation in a wing of the building.

Several of the apartments occupied by the inmates are abundantly roomy, and have sufficiently high ceilings. Those in the attic are very deficient in these respects. They were all constructed without the least regard to ventilation, and consequently, since the introduction of stoves, the condition of the atmosphere within them has been just such as would be expected in rooms crowded by persons of uncleanly habits, with closed doors and windows even during the hot nights of summer.

In the winter and spring of 1849, the admissions into the hospital were

unusually numerous. This arose from the proximity of the poor house to New York city, from which emigrants not unfrequently come immediately upon landing, and are within a few days seized with ship fever. This fever also prevailed among those employed along the line of the Hudson River Railroad, to such a degree that on some sections labour was suspended for want of men.

The baneful consequences of defective ventilation, or rather of the almost entire absence of it, with neglect of cleanliness, soon became alarmingly apparent in the hospital, where, under the absence of anything like proper nursing, medical treatment was almost entirely unavailing, and the patient struggled with his disease under circumstances most adverse.

During the winter and early spring, the sickness was confined almost entirely to cases received from without the house. Later in the season, when the epidemic along the railroad had almost subsided, it broke out in the poor house and attacked many of its inmates.

In June, the cholera suddenly broke out, the establishment continuing in its previous condition, in consequence of the impossibility of procuring labourers to perform the necessary work of keeping it in proper order.

During the past winter, an attempt was made at ventilating a part of the building, which, imperfect though it be, has materially increased the success of medical treatment, and the personal comfort of all concerned.

Fibrous Tumour of the Uterus with Polypi.—Mrs. G. æt. 52, was confined seven years ago, and has since aborted once. At regular monthly intervals she has been subject to attacks of hemorrhage from the vagina. They always are preceded for a day or two by severe pain above the pubis, more especially in the situation of the left ovary, and she says “she can then feel a lump above the pubis; but the tenderness is too exquisite for her to permit of any examination. On the appearance of the discharge the pain passes off. The discharge is always profuse, and I have several times seen at the least a quart of blood which she had passed.” The pulse was at such times small and weak; the hemorrhage controlled by cold lotions and acet. plumb. with opium, and rest on her back. She died of cholera in July, 1849.

Autopsy.—A sac of the size of an orange, with very thin walls was attached to the mesentery, and filled with a fluid of the colour and consistence of cream. The uterus was low in the pelvis. In its substance were several firm fibrous tumours from a half inch to two inches in diameter, some appearing on the outer surface, others protruding into the cavity of the organ. In the cervix was found a polypus not over a half inch in length and two lines in diameter. Another, a little larger, was situated about the opening of the Fallopian tube. The polypi were undoubtedly the source of the hemorrhage.

Encephaloid Tumour in the Substance of the Brain, and Malignant Disease of the Testis.—William Hutchins, æt. 27, was admitted under the care of Dr. Scribner, Sept. 26, 1848, for a disease of the left testis, which I had not the opportunity of seeing. He left on the 30th, and re-entered Nov. 22d, having in the meantime suffered the removal of the testis. The nature of its disease I had at the time no means of learning. The notes on his

admission, are as follows: "Patient is stout and muscular, of large frame, bilious temperament, and in good flesh. On approaching his bedside, the expression of his countenance is strange. He stares you in the face, winks his left eye as often as every half minute; and when asked what ails him, answers with an air of indifference, 'Nothing.' When addressed, he speaks slowly and hesitatingly. Says he was well until he was operated upon; that about a week afterwards, his lower extremities became somewhat insensible to the touch. This insensibility, he says, increases, though he is conscious when pinched. The left arm seems to be insensible to about the same degree. He gets up occasionally and staggers about the room, taking hold of the chairs, and in doing so frequently falls forward to the floor. When sitting by the bedside, he sometimes falls suddenly forward headlong. When requested to sit up in bed, he does so very deliberately. Both hands tremble when he reaches them out to take his cup. On being told to show his tongue, it is thrust out close to the right side of the mouth, and the left angle of the mouth is raised so as to show the gums. He is partially blind; able to distinguish the window, but says he cannot see one standing beside him, though he is said to walk about by the chairs; and he grasps his drinking cup when within reach. There is little, if any difference in the size of the pupils; there is no congestion of the conjunctiva. The spasmodic action of the orbicularis palpebrarum of the left eye is very strong, and independent of any movement of the right eye. His memory is defective, and he does not remember in what place he was operated upon, and the account which he gives of himself evidently cannot be relied on. He is somewhat hoarse, and spits out frequently a tough, viscid saliva. His mouth is dry, his thirst great, and he swallows large quantities of cold water. The tongue is generally covered with a thick fur, but is bare in spots. The pulse is of natural frequency, full and pretty strong. The bowels move daily, and to-day he has control of them. Two days ago he passed his urine and feces in bed. How long he has done this, he does not know. He further states that for several weeks he has had pain along the cervical and dorsal vertebræ, and also *across the chin* and over the eyes. At times he moans a good deal. Ordered a calomel cathartic."

Nov. 27th. General appearances the same. Pupil of the left eye is a shade smaller than the right, both contract equally when exposed to the light. The tongue is in the median line when protruded, and there is no paralysis about the mouth. The spasmodic action of the left orbicularis palpebræ continues. Since the last visit has passed urine voluntarily, and had the control of the sphincter ani. He has two or three times, on attempting to walk, suddenly fallen to the floor, presenting no spasm, frothing at the mouth or diminution of intelligence. He sometimes totters across the room after water. His appetite is good, and he eats abundantly. He drinks less than when admitted. Tongue the same as before. Repeat the calomel cathartic.

30th. 4 P. M. Has been purged twice. His condition has continued the same as hitherto, until this noon, at which time, soon after receiving his dinner, he was observed sitting in bed supported by a chair, with his head drooping. Since then he has lain with his eyes open, staring, and when spoken to, turns round but does not speak. He protrudes the tongue when directed. There is no heat of the head or turgescence of the vessels of the eye. The spasm of orbicularis is no longer to be observed. The feet are cold. Lies on the right side, with his feet drawn up, and so far as can be ascertained, there are but *six or seven respirations in a minute*, and nothing then but a prolonged, blowing expiration perceptible. The pulse, counted two hours ago, was but 50 in the minute; it is now 80.

The head was shaved, and the camphor moxa, as a convenient counter-irritant, applied to the occiput and the nucha. He manifested but little sensibility during the operation of this severe agent; sinapisms were applied to the extremities.

Dec. 1st, 10 A.M. Appearance changed; is sitting up supported in bed eating his dinner. He became sensible about 10 o'clock last evening. Talks now as well as before yesterday; protrudes his tongue in the mesial line; partial loss of sensation and of motion in the right lower extremity, and diminished sensation of the right arm. Increased heat of head; pulse 80, more full and firm, but compressible; breathing much more natural, still some blowing character to the expiration; pupil of the left eye decidedly dilated. Does not remember anything of the moxa, which has produced but little vesication or even redness; ordered a blister to the nucha and counter-irritation to the extremities.

2d. Found him sitting up in bed, looking cheerful, and he spoke more naturally than at any previous visit. The extremities were warm, head above natural temperature, and he complained of some pain in the forehead. There appeared to be loss of sensation in the right leg quite up to the pubis; sensation of the rest of the body apparently perfectly good. The spasmodic twitching of the orbicularis of eye not returned, but a slight degree of *ptosis* perceptible. Tongue protruded straight; more clean; none of the viscid saliva observed previously; thirst gone. Involuntary passage of urine; pupils more dilated than before and differing but little in appearance. Pulse 96 and full; on the afternoon of the 1st it was 50, respiration 20 and regular.

4th. Expression of countenance less bright; involuntary discharge of urine and feces. Sensation has returned to the right leg, and is apparently perfect over the whole body. There is some twitching of the orbicularis of the eye; pupils less dilated. Can probably see better than he pretends, and is considered by those about him as "vicious." Pulse 80; renewed secretion of viscid saliva.

7th. About the same; there seems to be diminished sensibility of the right leg, thigh and arm, especially below the knee. He almost altogether refuses food.

8th. When seen in the afternoon there was no change. Soon afterwards, he was observed to turn in bed, to draw up his right leg, which he had been observed to move but little for some days, and to moan. His breathing became laboured, and in fifteen minutes he was dead. He had all along exhibited a provoking perversity of disposition, which induced those in the room with him to suppose he was feigning sickness.

Autopsy.—Seventy hours after death, the brain having been removed by Dr. Scribner and immersed in alcohol, was examined.

Vessels of the dura mater full but not distended. Along the course of the longitudinal sinus there was opacity and thickening of the arachnoid in the interlobular spaces; over the posterior lobe of the left hemisphere, the membranes adhered, so as to be inseparable from the brain, without subjecting it to laceration. They were found adherent to the upper surface of a firm tumour which occupied nearly the whole of the posterior lobe, and a considerable portion of the middle one. It was surrounded at the sides and below by a greater or less thickness of cerebral matter, which was reduced in places to a mere film beneath the meninges; only a very thin lamina of cerebral matter separated the tumour from the lateral ventricle. A distinct sac could be perceived investing the tumour on all sides, excepting anteriorly, where the surrounding brain was so softened as to fall down in a diffuent, puruloid mass.

The surface of the sac was smooth and glistening, of a light fawn colour. The optic thalamus of the *right* side was decidedly darker than that of the left side. The right ventricle contained a drachm of serum, the left was unavoidably lacerated and its contents escaped. There was a free escape of serum from the base of the brain, on its removal from the skull. The cerebellum and medulla oblongata seemed natural. The tumour weighed $\text{3iv } \text{3vii}$, was four inches long by two and a half broad, and quite firm to the touch. It was undoubtedly encephaloid in its character.

The following particulars I have recently learned by a letter from Dr. Hosea Fountain, of West Somers, in this county, who removed the testis. Dr. Fountain says, "About a year before this was removed, Hutchins came to consult me; his testicle was then enlarged but little. He had been told it was hydrocele, and he wished me to tap it. His health appeared then good. There was, however, a slowness of motion and of speech I had never observed in him so much before. I do not remember that he showed any symptoms of head disease at this time. I advised the removal of the testicle at once. He was unwilling to submit to it, but went to a quack and worked for him in the field through the season with the hope that he would cure him. When next he came to me, six or eight months or more afterward, his appearance had changed much. The testicle was enlarged and painful. There was a difficulty about making water; I do not remember of what nature this was. His eyes had a vacant, glassy look; vision was imperfect, at times worse than at others, and one eye was worse than the other. In walking, his gait was unsteady, hesitating and wavering; the pulse slow, speech and motion very slow. I refused doing any thing for him, telling him he must die. Some months after this, the unfavourable symptoms had increased. He talked like one in a reverie or partly asleep; at times he was almost blind.

"I suspected disease of the brain, but from the symptoms supposed it was *softening* from deficient action." Subsequent to this, Dr. F. was induced to remove the testis, for another physician into whose hands his patient had fallen. "After the operation, upon pressing the spermatic cord near the divided surface, a white cheesy looking matter oozed from the whole of the divided surface. On dividing the testicle, the surface presented was white and moderately firm toward the surface, becoming softer internally; the central portion was semi-fluid, not purulent; the whole appeared to me as medullary matter. In his best and healthiest times, Hutchins was slow and awkward in his movements, but a strong and able worker, and apparently a healthy man." The wound made by the operation healed readily.

Malignant Disease of the Testis and Lungs.—Baptiste —, æt. 30, a native of Germany, was admitted August 10, 1849, with a large scrotal tumour. The account which he gave through two interpreters, at different times, was this. He had not been aware of any swelling in that region until two weeks prior to his admission. At that time, while engaged in handling heavy stones on the Hudson River Railroad, the right testicle was accidentally struck by an iron crow-bar. He soon noticed its increase in size, and in *two weeks* from the receipt of the injury, at the time of his admission, the tumour had attained about the size which it now presents after removal from the body, being about as large as the head of a child six months old. Its surface was irregular and lobulated, with numerous large veins passing in deep channels transversely across it. At one point there was distinct fluctuation. The lower part when compressed between the two hands afforded a gurgling not unlike that produced by the yielding of the intestine during the reduction of a hernia. This

was observed by another physician; this, with the fact of its following violent exertion, and attaining so great a size in so short a time, induced, on an imperfect examination, a suspicion of its being a hernia. No connection, however, could be traced between the tumour and the abdomen; and this circumstance, together with the malignant aspect of the countenance, made it clear that it was a malignant disease of the testis. The cord appeared free from disease, and it was resolved to give him the chances afforded by a removal of the diseased organ. There was a good deal of activity in the tumour, and he complained very much of heat and pain in the organ. The surface was at two particular points, of a bright red and hot to the touch. On visiting him two days afterwards, he was observed to cough, and his expectoration was very copious and rusty. The right lung sounded dull on percussion, laterally; there was diminished clearness of respiration, some mucus but no crepitant rale. Pulse was about 100, full and rather hard, the skin hot, and there was considerable thirst. He was treated with antimony in small doses, and afterwards was blistered. The rusty sputa disappeared, and was succeeded by the white frothy sputa of bronchitis; the dullness however remained, and respiration became less audible. From the time of the appearance of symptoms of congestion of the lungs, he rapidly lost flesh and his appetite. In a few days, the dullness, which had hitherto reached only to about the third rib, was found to extend quite up to the clavicle, and so very marked as to be observed by all the bystanders. Three or four times he lost a good deal of blood from a wound of one of the varicose veins of the surface which he had injured by scratching. His sufferings were very great, and he daily implored me for the removal of the disease, but an operation was of course out of the question. Belladonna ointment afforded some relief; opium he refused to take. During the time he was in the hospital, the tumour increased but little, not over two inches in its longest circumference. About two weeks before his death, he expectorated a pint of bloody froth, and a piece of what seemed to be disorganized lung, an inch long and half an inch in diameter. For some days before his death, the fecal discharges consisted of a small quantity of bright-coloured yellow fecal matter, and a larger quantity of a white pulraceous substance not unlike *blanc mange*.

He died, October 5th, just eight weeks from his admission, and, if the history derived from him is correct, only ten weeks from the appearance of the disease in the testis.

Autopsy eight hours after death.—Great emaciation. The tumour had lost its feeling of firmness and was flaccid, from subsidence of active congestion, giving the idea of its being chiefly fluid; it had also shrunk so as to measure precisely the same as when he entered the hospital weeks before. The varicose vessels ran down over the anterior part of the thigh and down over the perineum; no arteries of any size were observed in the dissection. In the anterior part of the tumour the skin was so closely adherent as to be inseparable—there was no vestige of tunica vaginalis or of the testis, the tumour being covered by the thinned integuments of the scrotum alone. The cord was free from disease external to the abdomen; within that cavity a diseased gland was found lying in contact with the spermatic vessels. A large number of mesenteric glands were enlarged, and of a white colour; a few consisted of a soft brain-like matter, and equalled a small hen's egg in size. The liver presented no unusual appearance; the gall-bladder was distended with green bile, the spleen small and healthy, as were also the pancreas and kidneys; the stomach and intestines were not opened.

Great difficulty was experienced in removing the right lung, from its

intimate adhesions to the walls of the chest and to the diaphragm, in consequence of which it was much torn. The whole of it, excepting the apex extending to between the second and third ribs was converted into a solid mass of medullary disease, readily broken off in lumps and almost exactly like brain in colour and general appearance without its cohesiveness. The superior portion of the lung yielded an abundance of bloody froth when cut into, and it could not be torn. The left lung presented a few patches, which were emphysematous; in addition, there were several tumours of medullary matter disseminated through the substance of the lung, and embedded just beneath the pleura pulmonalis, an inch or more in diameter. A section of this lung presented the same bloody froth as that found in the apex of the other lung.

The heart was pale and flabby, and there was a hypertrophy of the right *ventricle*; the two ventricles differed but little from one another in thickness; the tumour weighed after removal, six pounds six ounces; the lung completely filled the left side of the cavity of the thorax. This testicle, and the tumour of the brain in the preceding case, are in the museum of the New York Hospital.

Remarks.—In the first of these two cases we are ignorant of the exciting cause of the disease, neither do we know whether its origin in the brain was simultaneous with its appearance in the testis, or consequent, or antecedent. From Dr Fountain's account, when the testis was so far diseased as to require removal, there was a slowness of gait and speech. Walshe says that an affection of the lymphatics and glands communicating with the diseased organs affords a means of ascertaining the order of succession in the development of the disease. The absence of any such affection of the inguinal glands, in the case of Hutchins, is perhaps negative evidence that the testis was not the organ primarily affected. In the case of Baptiste, there is quite conclusive evidence that the lung was first affected. However skeptical some may be as to the rapidity of the growth of the diseased testis, it is certain that at the time of his admission he was engaged in daily labour upon the railroad; he repeatedly stated that he observed nothing unusual about the testis until two weeks before his admission. At that time his whole appearance however was cachectic; we can hardly suppose that the constitution could have become contaminated in two weeks, and there can be little doubt that the disease of the lung had existed for several months; for cancerous diseases "may exist for a length of time in the most important organs—witness the brain, the liver, the lungs—without producing the least functional derangement."—*Walshe*. In the *New York Journal of Medicine* for 1847 is reported a case of encephaloid disease of the lungs, which the patient dated from "a sudden giving way in his side," which occurred while he was at work in the harvest field about a year and a half before his death; his health had not been good for some time previous to that. I have no statement as to the health of Baptiste previous to the accident to his testis. No cough was observed on his admission; certainly no dyspnoea; and I am under the impression that there were no rational symptoms of any disease of the lungs previous to the attack of congestion

which occurred on the second week after his admission. The disease, from being latent, became suddenly active, and thenceforward proceeded with rapid and fatal strides. It will be observed that the increase of the tumour after his admission was entirely disproportionate to its previous growth. Was there a transfer of active disease from the testis to the lung? Apart from the cachectic appearance, at a time when the injury to the testis was so recent, the pre-existence of the pulmonary disease is made probable by the coexistence of hypertrophy of the walls of the right side of the heart. This lesion, as is well known, frequently depends on obstruction of the pulmonary circulation. There was no marked dilatation, if any, connected with the thickening of the walls of the ventricle.

The rapidity of the growth of the diseased testis was certainly remarkable. Walshe, however, quotes from Andral a case of encephaloid growth of the omentum, extending from the greater curvature of the stomach to the pubes, which *daily* increased perceptibly, and which proved fatal in five weeks from its first appearance, and adds that he has himself seen instances of equally rapid growth in the extremities. A curious feature of Hutchins's case was the irregularity attending the loss and restoration of sensation and motion of the limbs, whatever may be the explanation of the matter.

Double Femoral Hernia with great dilatability of the Abdominal Muscles.—The patient had a femoral hernia in each groin of the size of a goose egg. During convalescence from an attack of dysentery, he was attacked with peritonitis, which yielded to treatment. Soon afterward, when standing, a fluctuating prominence was observed in the left iliac region, four inches by two and a half inches, in the direction of the muscular fibres. When the fluid had been removed after appropriate treatment, it was found that he could inflate himself, so as to cause several such protrusions where the abdominal muscles were deficient in tone. The fluctuation had been caused by the fluid effused in the attack of peritonitis falling into the pouch. He was supplied with a broad bandage, and discharged.

Gangrene of the Leg from simple fracture.—This took place in a man of about 40 years of age, who was brought in about a week after meeting with the accident. The fracture was caused by the fall of a bank of earth. There was no evidence of extensive or important injury to the soft parts. A line of demarcation had formed just below the knee, at and below which point, for several inches, the limb was of a dead charcoal black. The limb above the knee was emphysematous, and also the lower part of the abdomen. Under the use of brandy and quinine, the effusion of the gases into the subcutaneous cellular tissue was in part absorbed, and the jaundiced hue of the skin disappeared. He declined amputation, and lived eight or nine days after admission.

Compound Dislocation of Ankle-joint and Fracture of the Femur.—The patient was a young Irishman, æt. 20, of good health and habits, who was injured by the fall of a bank of earth. There was the dislocation of the ankle outwards, with fracture of the tibia and fibula quite close to the articular extremity, and the internal malleolus was broken off: about two and a half inches above the

latter was a laceration of the integuments, just admitting the extremity of the little finger. There was a simple fracture of the femur of the same limb at the junction of the middle and the lower third. The limb was placed upon a double inclined plane, and treated with cold applications. Reaction was not excessive; quite firm union of the fractured femur took place in three weeks. His general condition, however, was bad, and it became evident that his only chance for recovery was in amputation, which was performed below the knee by the flap method, on the 24th day after the receipt of the injury; the patient being rendered insensible by the inhalation of ether. He slept well on the night of that day; the next day there was increased heat of the skin, thirst, and pulse 130. On the third day his pulse was 140; he was quite comfortable in his feelings and the little pain which he suffered was referred to the foot. During the night the limb suddenly became swollen to twice its previous size; he vomited bile copiously, his skin became of a yellow hue, and when seen next morning the entire stump for five or six inches up the limb was one dark, fetid, gangrenous mass. He died on the next day. This result I attributed in part at least to the condition of the air in the hospital at the time.

Compound Fracture of the Leg.—This patient received an injury in the same manner as the two cases last related. He was an able-bodied, temperate man, about 40 years of age. The external wound, three inches above the external malleolus, just admitted the forefinger, and there was but little displacement; there was very free hemorrhage. He was made to inhale the vapour from a drachm of chloroform, and then on passing the forefinger into the wound there was discovered extensive laceration of the soft parts and comminution of the bones, the articular end being broken into three pieces. Amputation was advised, but obstinately refused. The limb was placed in a box of wheat bran, after reduction of the fibula, that of the fragments of the tibia being impracticable. On the fifth day, there was every appearance of gangrene. There were delirium, fetid discharges and great debility for about three weeks, when he began to improve. At the end of five weeks, there was union of the bones sufficient to sustain the limb when held up by the heel. Discharge continued, and in a few days he began to sink, and died two months after admission. The bones of the joint were almost completely denuded of periosteum and cartilage. There was a similar condition of the articular surfaces of the bones of the elbow joint of the left arm, which had suffered an apparently trifling contusion at the time of the accident, also an abscess between the muscles and the bones.

Of fractures, those of the clavicle, in accordance I believe with general experience, have been the most frequent. They have been treated sometimes by directing the patient to lie on his back till union takes place—a direction, by the way, which poor-house patients rarely find fault with, the elbow being generally supported by a sling. In compound fractures, the limb has been treated by being placed in a box partially filled with wheat bran, in which the limb lies imbedded; this is a particularly convenient mode of treating accidents attended with suppuration.

Anæsthetic Agents.—Chloroform and sulphuric ether have both been frequently employed for anæsthetic purposes, and generally with most gratifying consequences. Ether has been used in preference to chloroform, from an impression that its exhibition was less hazardous. It has been used almost

indiscriminately in cases of dislocations, in reduction of fractures, in the examination of extensive wounds of the soft parts, and previous to making incisions for the evacuation of pus in deep-seated abscesses, in phlegmonous erysipelas, periosteal inflammation of the fingers, &c. The effects of these agents have been most gratifying in the reduction of dislocations, which, after its administration, has been effected with very little exertion.

In only one case of labour was chloroform resorted to. Its administration was followed by an almost entire cessation of the pains, which continued so long as the patient was at all deeply influenced by it. By keeping her but moderately affected, the action of the uterus was not interfered with, and she was delivered in a condition of partial insensibility. In private practice I have administered both chloroform and ether in cases of labour, with none but the most happy effects; and in none but the above instance have I seen the strength of the pains affected by either of these agents.

Cholera.—During the summer of 1849, the cholera made its appearance, close upon the heels of ship fever, when the house was just beginning to recover its ordinary condition of health. Up to this time, there had been no case of cholera, so far as I can learn, between this place and New York, nor was there any evidence of its introduction from that city. Repeated warnings had been given the inmates that they should apply for medical aid the moment that any one should perceive in himself any disposition to diarrhœa, but as yet few if any had presented themselves, when two men sleeping in beds almost adjoining were suddenly taken with cramps, vomiting and diarrhœa, after midnight, and before noon were both dead. On the same day, a female at the opposite end of the establishment was similarly seized, and died within twenty-four hours. From this there were some three or four new attacks daily among the inmates of the house. The paupers at this season of the year were the infirm and aged, children and lunatics. Upon the latter the pestilence fell with the greatest severity, about one-half the victims being from these unfortunates. It was impossible, in general, to learn anything of their condition until the disease was fully developed.

Immediately on the appearance of the disease, it was discovered that a large number had for many days been suffering from diarrhœa, which they had kept concealed from the keeper and medical attendant. During the continuance of the cholera, cases of diarrhœa were constantly occurring, and every patient seized with cramps, vomiting and serous discharges from the bowels, so far as could be ascertained, had laboured under diarrhœa for several days previous. Not a few suffered themselves to run down under continued diarrhœa, without applying for aid, until too late, notwithstanding the daily warnings from the death of those around them. One nurse had three distinct attacks of cramps, vomiting and serous diarrhœa within five or six days, each traceable to reckless imprudence, and completed his week's work by catching a mess of fish on the Sabbath, and cooking them by stealth; and within a

half hour after eating the same he was dead. This is not a solitary illustration of the abject moral condition to which the inmate of the almshouse has too often, I may say, generally fallen.

In the treatment of cholera, we had unquestionable evidence of the utility of calomel and opium. The usual mode of administration was that of from three to five grains of calomel and one of opium every two hours, until the action of the liver became re-established. The reappearance of bile in the evacuations was anxiously looked for, and when observed it was regarded as indicating a favourable turn in the course of the disease. In one instance, the attack being very sudden and severe, one grain was given every ten minutes, with three or four drops of laudanum, and the patient recovered.

In one case of collapse, scalding water was applied to the abdomen, and calomel given in one-half drachm doses every half hour, for two hours; but the result in this instance did not encourage a repetition of such heroic practice, even in desperate cases. There were but two examples of secondary fever following reaction from collapse, and both proved fatal.

In the latter part of the epidemic, my attention was directed more to the necessity of controlling the diarrhœa, as such. The constant prevalence of diarrhœa, during the entire epidemic, presented what seemed to be a series of examples of cholera from its simplest up to its most grave and fatal forms; and pressed upon the mind most forcibly the conviction that all these cases were the result of the same morbid cause; and we were compelled to admit the conclusion, now so generally entertained, that the diarrhœa is not a premonitory, or *admonitory* symptom, but the first stage of the disease itself; not that every case of diarrhœa would, if left alone, have terminated in collapse; but that any of them *might* thus terminate.

In the treatment of diarrhœa, a mixture of aqua ammonia, spirits of camphor, tincture of opium and tannin was kept prepared, and directed to be freely given to those who applied for relief. This, with a recumbent position, was generally successful.

During the state of collapse, frictions with capsicum were found more effectual in inducing reaction than any other agent. The vapour and hot air bath were faithfully tried, but little benefit resulted from their employment. Conjoined with frictions, was the moderate use of the solution of chloroform in camphor and spirits of nitre.

The theory of the dependence of cholera upon the existence of an agent in the atmosphere called ozone, and the fact of its being neutralized by contact with sulphurous acid gas, early attracted our attention. It was evident that the combustion of but a small quantity of sulphur would be sufficient to neutralize all the ozone the atmosphere of the buildings might contain. A quantity of flowers of sulphur were stirred into a strong solution of nitre, until the whole was of the consistence of cream. Several yards of common lamp-wick were then dipped into the mixture, and after being withdrawn, were dried in the sun, thus forming a slow match, encrusted with sulphur. A

coil was put in each room, on a plate of metal, and set on fire at one end. A little attention was required every hour or two, to renew the coil when burnt out, and the apartments were by this means constantly filled with an odour of sulphurous acid, just barely perceptible. Should it ever be deemed desirable to push the experiment on this alleged influence of sulphur fumes, in destroying the morbid poison, this is confidently recommended as a convenient mode of securing a continuous and moderate supply of the sulphurous acid gas. Our limited experience does not warrant the expression of any opinion upon the utility of the measure. Unfortunately, in consequence of the great press of duties at the time, I neglected to test the presence of ozone and the effect of the sulphurous acid gas, if any, upon it, by iodide of potassium. There were, during the epidemic, forty-seven cases and twenty-seven deaths.

Dysentery.—Very soon after the disappearance of cholera, *dysentery*, which was then prevalent in the surrounding country, made its appearance in the house. Both here and in the neighborhood the character and progress of the disease seemed to be modified by the cholera atmosphere. There was in many instances a degree of prostration attending the disease which could not have been anticipated, and which must have been due to atmospheric causes.

In the treatment, reliance was placed on opiate enemata, nitric acid and laudanum, mucilage, fomentations, or blisters to the abdomen very early if fomentations failed to relieve the pain and tenderness. When there was marked deficiency of biliary secretions, calomel was employed, usually in small quantities, as one-sixth of a grain of calomel with an equal quantity of opium and a half grain of ipecac. every two hours. The gums were frequently tender in twenty-four or thirty-six hours, and then convalescence was confidently expected. In a severe case of diarrhoea attended with great prostration, after the failure of many other remedies a half drachm of sulphate of zinc was given in an enema with a pint of water and two drachms of laudanum. The patient rallied at once and recovered. Nitrate of silver was frequently given in enemata, of the strength of fifteen grains to half a drachm, to the ounce of water, followed immediately by an enema containing a drachm or two of laudanum to relieve the tenesmus caused by the caustic.

I may remark that this treatment was adopted first in private practice, in the case of an old gentleman who was labouring under a severe chronic diarrhoea, the sequel of a grave attack of dysentery. At the end of the fifth week, when a large number of remedies had been resorted to in vain, among which were enemata of strong solutions of sulphate of zinc, of acetate of lead, of opium, and of tannin, and the administration of the same by the mouth, a solution of half a drachm of the crystallized nitrate dissolved in an ounce of rain water was thrown up the rectum by a glass syringe. It was not retained a minute, and caused a good deal of tenesmus for some time after the injection

of starch and laudanum, which was given immediately. Previous to this, his discharges had generally occurred as often as once in two hours. He now had none for fourteen hours, and in the remaining ten hours had five, but they were less in quantity than before. All medicine by the mouth was suspended except a few drops of sweet spirits of nitre. During the next twenty-four hours he had five dejections, small and quite consistent. That day he had another enema containing only fifteen grains of the caustic followed by the opiate, and during the next twenty-four hours he had but three dejections. From this time he gained strength, and in eight days from the first employment of the nitrate of silver he was walking about the house; more or less irritability of the bowels continued through the winter following, owing to his uncontrollable determination to eat and act just as he pleased.

Ship Fever.—It has been already remarked that a large number of our cases of fever occurred in persons employed on the railroad. Many of these had been in this country several months, and several two years or more. The symptoms presented by them were, nevertheless, identical with those in persons recently landed. The conditions under which such persons live are abundantly favourable for the development and propagation of the poison of typhus; the shanties which they occupy being crowded to excess. I have notes of nearly one hundred cases, but from the imperfection of the details in several, I shall only give a few general results.

During the prevalence of ship fever, we had several cases of common bilious remittent, but never a perfectly well-marked case of typhoid fever as seen in the New England States.

The earlier symptoms were almost uniformly stated to be, chills followed by flushes of heat, and pain in the head, back and limbs; sometimes in the head and none in the back and limbs, and in other cases severe pains in the back and extremities without headache. Accompanying these there was almost uniformly a sense of great debility; in two cases there was great depression of spirits; sleep was very generally disturbed by bad dreams; nausea was occasionally complained of, but not generally; the bowels were generally torpid on admission.

When the disease became fully developed, complications were of frequent occurrence, and were universally met with in fatal cases. In the winter and early spring, bronchitis complicated almost every case; later in the season, the abdominal and cerebral organs were those most generally involved. Bronchitis, though in many instances severe, was fatal in only one case; two died from pneumonia.

In a few cases, the force of the disease fell upon the brain from the first. These patients were early seized with general tremulousness of the whole system with insomina, and more or less delirium; at first only at night, but at a very early stage of the disease, constant. In one case violent convulsions took place repeatedly during two or three days preceding death. Lesions of

the brain afforded the prominent symptoms in at least three-fourths of the fatal cases.

The tongue was almost uniformly covered in the middle with thin white fur, the tip and edges being of a brighter red than natural. Later, the white fur became yellow and thick, and in bad cases brown. In several cases there was inflammation of the fauces. There were two cases of parotitis of one side, which resulted in suppuration, both fatal. Some tenderness of the abdomen existed in a large proportion of cases; diarrhoea was by no means of general occurrence.

The pulse averaged from 115 to 120; in grave cases they reached 140 and remained so for several days. In only two cases was the pulse observed to be below the healthy standard, in these it was only 50 during several days.

Petechiæ were not always found; they were absent in at least one-third of the cases. When they occurred they were usually abundant, scattered over the extremities as well as the trunk, of a dingy red, and resembling somewhat in general aspect the eruption of measles. They did not entirely disappear on pressure. Their general duration I am unable to state; in one case in which they were of a bright rose colour, and not unlike those in typhoid fever, they disappeared on pressure and lasted six days.

Convalescence was quite generally preceded by a critical sweat, in a few instances by diarrhoea or epistaxis; but so far as could be observed, they did not occur on any particular days. It was, however, frequently difficult to determine from the patient's account the date of the commencement of the attack. For this reason the entire duration of the fever could not be correctly ascertained, but from a rough estimate, it was not far from sixteen days.

The mortality was about one in five.

Relapses were of very frequent occurrence and seemed to arise without any assignable exposure or imprudence. There was at least one case of the occurrence of the fever in the same person three times in succession, the patient having had an interval of health of a few days in which he was able to work.

There could be no doubt of the infectious character of the disease. During the winter 1847 and '8 the two attending physicians fell victims to the disease; soon after another experienced it. A medical student was also seized, and almost every nurse suffered severely from it; and as has been already stated it eventually prevailed among the inmates of the establishment.

The treatment was for the most part very simple. In most cases a dose of castor oil was required on admission. The surface was directed to be washed with soap and water and the patient put upon spt. mindereri, a tablespoonful three times a-day. Nausea was overcome by sinapisms to the stomach and the application of ice; tenderness of the abdomen generally yielded to a blister, when hot fomentations failed. If there existed any particular disturbance of the nervous system, two to five grains of camphor and half a grain or a grain of ipecac. were given every three or four hours. The solution of camphor in chlo-

reform was given with good effect in the same class of cases. Cold applications to the head were often required, and blisters to the nucha or to the shaved scalp, often acted most admirably in subduing cerebral irritation. Dover's powder and camphor, ten grains of the former and five of the latter, were uniformly given when the patient did not sleep well at night, unless there were symptoms of coma, or satisfactory coincidence of active inflammation of the brain.

Stimulants were in most cases required at an early date, and their effect in allaying irritability of the cerebro-spinal system was often very gratifying. One prominent cause of the large mortality was the faithlessness of attendants, who often drank the stimulants intended for the sick.

But few post-mortems were made. In two instances in which violent delirium had existed, meningitis was discovered. In the only instance in which I had the opportunity of making a thorough examination of the whole body, inflammation of the arachnoid of the upper surface of the hemispheres, with opacity and thickening was very strongly marked. The spleen was enlarged and readily broke down under the fingers. The liver was apparently healthy. The intestinal tube was carefully examined, and not the slightest appearance of inflammation or enlargement of the glands, or inflammation of the mucous surface could be observed.

The average age of patients was 27 years.

Intermittent Fever.—This, I have almost uniformly treated, by giving ten grains of quinine in powder, some four or five hours previous to the anticipated recurrence of the paroxysm. One dose has almost uniformly effected a cure. In some instances it has failed to arrest the expected attack, from its occurring at an earlier hour than before, or from the patients delaying too long the taking of the medicine. Nevertheless, in these cases, subsequent attacks have been prevented. I may remark that the quinine in the large doses referred to does not produce physiological effects proportional in intensity to the quantity taken. Not unfrequently have ten grains been given, without producing any of its ordinary physiological effects.

Ferro-prussiate of iron has often been employed, and with advantage, though it cannot be compared with quinine as an antiperiodic. Two cases were under treatment for several months, during which they were subjected to the effects of quinine in large and small doses, of Prussian blue and of arsenic; and proper attention was at the same time paid to a regulation of the various functions of the body. In one there was no evidence of any local congestion; in the other there was some enlargement of the liver; neither was cured. The case of the latter was rendered interesting, from certain anomalous symptoms connected with its progress.

In September, he entered, with tertian intermittent, which readily yielded to quinine. He went out and worked, and at the end of a month again entered, and was under treatment a month, and discharged, and in about four

weeks was re-admitted. He now had sometimes twenty "shaking fits" daily, sometimes of the head alone, at others of various limbs. At night, the bed was often heard shaking.

After awhile he suffered from intense neuralgic pains in the head. At the end of three months, his condition was as follows: In addition to the severe pains in the head and face, "pulse 66; respiration 130 *in a minute*." Of the frequency of the respirations, there was no room for doubt. I repeatedly counted the respirations during an entire minute, and there were that number of distinct inspirations in that period. At this time, "the pupil was seemingly somewhat contracted; but there were no evidences of cerebral congestion. When his attention is arrested, he starts up as from a doze; *breathes naturally while engaged in conversation*, and talks naturally; but on letting him alone, the rapid respiration returns, and he lies on his back, with his eyes wide open, as if insensible. Bowels have been torpid, but are readily moved by croton oil." He remained in about the same condition for six months. The paroxysms of rapid breathing continued to recur at intervals, lasting for several hours at a time. Between these, it was not uncommon to find him apparently very comfortable, and he would speak of himself as feeling "first rate." The only local lesion that could be detected was an enlargement of the liver; it descended about a finger's breadth below the edge of the ribs. His emaciation was extreme. He died of dysentery, during the epidemic, having inflammation of the fauces. No post-mortem examination could be obtained.

ART. V.—*Statistics of the Boston Lying-in Hospital.* By D. HUMPHREYS STORER, M. D., one of the Physicians of the Massachusetts General Hospital. (Read before the Boston Society for Medical Improvement, July 8th, 1850.)

SEVERAL of the gentlemen present may remember that I read a communication to this Society eight years ago, upon several hundred cases of midwifery which had occurred in my own practice. In that paper, I apologized for its meagerness, upon the ground that the private physician could not present such detailed accounts of his cases as those who were connected with public institutions, where the opportunities for study were more numerous and greater attention was devoted to minutiae. Having been connected with a small lying-in hospital for a period of four years, since those remarks were made, and having consequently possessed the advantages which that institution afforded, I feel in a manner compelled to present to you its statistics, limited though they are, as accurately prepared as I have been able to arrange them, from its foundation to the period of my leaving it.

My predecessors in office were Drs. Channing, Hale, Osgood, and Putnam.

In preparing this paper, I have made the most free use of their records. Unable to determine, in most instances, under the care of which of those gentlemen individual cases have been treated, I have scarcely referred to either of them by name. Most faithfully have they each performed their duties.

1. *The whole number of Children.*—In 451 deliveries there were 456 children; in five cases twins occurred. In 331 cases, of which accurate notes have been kept, I find there were 132 males and 199 females.

2. *Age of the Patient when delivered, in 451 cases.*

Age . . .	16	17	18	19	20	21	22	23	24	25	26	27	28	29
No. delivered	1	2	11	17	18	30	42	39	29	36	34	25	32	20
Age . . .	30	31	32	33	34	35	36	37	38	39	40	42	45	47
No. delivered	22	7	22	9	6	12	8	6	11	3	6	1	1	1

The youngest woman delivered was 16 years old, the oldest 47.

The greatest number of deliveries occurred at the ages of 22, 23, 25, 26, 28, and 21.

3. *Number of times each Patient has been Pregnant in 417 cases.*

No. of pregnancies . . .	1	2	3	4	5	6	7	8	9	10	12	16
No. of patients . . .	193	88	40	25	23	18	14	8	2	4	1	1

By this table it is seen that the whole number of pregnancies of the 417 patients was 1060—that the greatest number of times any woman had been pregnant was 16, which occurred in but one instance—that 193 of the cases were primipara—and that the average number of times each had been confined was 2.

4. *Last Menstruation in 201 cases.*

No. of days	279	278	277	276	275	274	273	272	271	270	269	268	267
No. of cases	7	8	11	9	4	6	6	6	8	20	2	4	2
No. of days	266	265	264	263	262	261	260	259	258	257	256	255	254
No. of cases	5	9	9	3	5	4	7	4	3	2	1	4	2
No. of days	253	252	250	249	246	245	244	243	242	240	236	228	220
No. of cases	4	2	6	1	2	2	2	3	1	11	1	1	1
No. of days	215	213	212	207	195	180	162	150	120	69	57		
No. of cases	1	2	1	1	1	2	1	1	1	1	1		

The longest period, previous to delivery, of the last menstruation, was 279 days—the shortest was 57 days; of the former were 7 cases, of the latter 1. The average number of days at which menstruation occurred previous to confinement was 256, or 36 weeks.

In two cases, menstruation occurred during each month of pregnancy. In one of these cases, the patient was 38 years of age, and this was her eighth pregnancy. The records read thus—“Has menstruated during the whole of pregnancy.” Had never menstruated during a former pregnancy.

In the other case, the patient was 36 years old, and she was in her

"sixteenth pregnancy. She had had 12 children, and 3 miscarriages. The first successive 5, were females; the last 6, males. She had been married nineteen years—nursed all her children—*menstruated regularly during the whole period of her pregnancies.*"

5. *The period of Quickening in 158 cases.*

Days before confinement	60	83	86	90	93	96	100	106	109	110	111	113	114	116
No. of women	.	.	1	1	1	1	1	2	1	1	3	1	1	1
Days before confinement	118	119	120	121	122	124	125	126	128	129	130	131	132	133
No. of women	.	.	1	1	6	1	1	2	3	1	1	5	4	2
Days before confinement	134	135	136	137	138	139	140	142	143	144	145	146	147	148
No. of women	.	.	1	5	1	6	3	4	8	1	2	3	5	2
Days before confinement	149	150	152	153	154	156	157	158	159	160	161	163	164	165
No. of women	.	.	1	8	2	2	2	3	2	1	4	4	3	2
Days before confinement	166	168	169	171	173	174	175	176	180	186	187	188	192	199
No. of women	.	.	1	2	1	1	2	1	2	2	2	2	1	1

The least number of days in which quickening took place previous to confinement was 60—the greatest number of days previous to confinement was 199; of the former was 1 case, as well as also of the latter. The average number of days at which quickening occurred was 142.

A woman, aged 25, in her first pregnancy, stated "that she had never during her pregnancy experienced nausea or vomiting, nor felt quickening."

6. *The Duration of Labour in 433 cases.*

Hours in labour	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
No. of women	12	28	23	26	41	38	27	22	23	21	12	21	13	10	10	19	5	13	6	6	2	5	
Hours in labour	24	25	26	27	28	30	31	32	33	34	35	36	37	40	41	42	45	48	53	58	70	74	88
No. of women	8	6	3	2	5	2	2	3	1	1	1	4	1	2	1	1	1	1	1	1	1	1	1

The least number of hours any woman was in labour was 1—the greatest number of hours was 88; of the former there were 12 cases, and of the latter 1. A greater number of labours occupied 5 hours than a longer time—and next in frequency were those completed in 6, 2, 7, 4, 3, 8, 10, and 12. The average number of hours was $11\frac{1}{2}$.

In the 5 most protracted cases mentioned above, the mother did well in each instance, and in 3 of the cases the child was saved.

The case occupying 53 hours was one of mere inefficiency of pains.

That case which was terminated in 58 hours was rendered difficult by the presentation of "the right arm with the funis." The membranes broke without any pain being present, and the patient was not seen until several hours afterwards, when the arm and funis were found in the vagina. The child was immediately turned, but was *still*.

In the case in which labour was delayed 70 hours before its completion, a "sudden discharge of the liquor, without obvious cause," took place before the os uteri had become sufficiently dilated to expel the child.

In the case in which labour continued 74 hours, the *size of the child alone* appeared to be the only obstruction. The mother, twenty-five years old, had

had two children, each of which, according to her account, weighed upwards of eleven pounds. She was in pretty good health, the presentation was natural, and she sustained her labour so well that I was unwilling to interfere—and eventually she gave birth, unaided, to a living male child, weighing twelve and a half pounds—the largest child which had been born in the institution.

In the remaining case, which occupied 88 hours, the left foot and head presented—the head considerably higher than the foot. “Some efforts were made to draw down the foot and push up the head, but finding the head most disposed to descend, the foot was supported during the pains, and the head came down.”

7. *The time of Birth.*—In 428 cases, 214 occurred between the hours of 7 A. M. and 7 P. M. ; and 214 cases between 7 P. M. and 7 A. M.

These results differ from those in 280 cases published by me in the *New England Quarterly Journal of Medicine and Surgery* in 1843, and also 440 cases published by Dr. Metcalf, in the *American Journal of Medical Sciences* for October, 1847—in each of which a larger number of births are stated to have occurred during the night than during the day.

8. *The Months at which Delivery occurred in 451 cases.*

Months, Jan.	Feb.	Mar.	Apr.	May	June
No. of children, . 53	43	30	46	38	35
Months, July	Aug.	Sep.	Oct.	Nov.	Dec.
No. of children, . 46	26	35	31	41	27

The largest number of children were born in January, and the smallest number in August.

9. *Weight of the Children in 406 cases.*

Weight, $\frac{3}{4}$ lb.	1	2	3	4	4 $\frac{1}{2}$	5	5 $\frac{1}{4}$	5 $\frac{1}{2}$	5 $\frac{3}{4}$	6	6 $\frac{1}{4}$	6 $\frac{1}{2}$	6 $\frac{3}{4}$	7
Male, 1			1		2	2	2	9	3	8	1	18	8	17
Female, 1	1	1	1	2	1	3	2	6	5	9	10	9	7	14
Weight, 7 $\frac{1}{4}$ lb.	7 $\frac{1}{2}$	7 $\frac{3}{4}$	8	8 $\frac{1}{4}$	8 $\frac{1}{2}$	8 $\frac{3}{4}$	9	9 $\frac{1}{4}$	9 $\frac{1}{2}$	9 $\frac{3}{4}$	10	10 $\frac{1}{2}$	10 $\frac{3}{4}$	12 $\frac{1}{2}$
Male, 11	27	15	28	7	11	2	14	2	12	5	3	1	1	1
Female, 10	25	14	24	6	11	7	7	2	3		3			

The number of males in the above table was 222, whose aggregate total weight was 1669 $\frac{1}{2}$ pounds; and the average weight of each was 7 $\frac{1}{2}$ pounds.

The number of females was 184, whose aggregate total weight was 1309 $\frac{1}{4}$ pounds, and the average weight of each was 7 $\frac{1}{6}$ pounds.

It will be observed that the weights of the above children fall considerably below those of the cases reported by me in the first volume of the *New England Journal of Medicine and Surgery*, and also of those registered by Dr. Metcalf in his paper previously referred to. I can account for this only by the fact that the great mass of his cases, if not every case reported in those communications, referred to American mothers, whereas the *vast majority* of the mothers of the children, included in the table here presented, were fo-

reigners. That my reasoning is not fallacious, will be perceived by the following table.

Of the 21 children which weighed 9 pounds, the mothers of 8 were Americans.

Of the 4 children which weighed $9\frac{1}{4}$ pounds, 3 had American mothers.

Of the 15 which weighed $9\frac{1}{2}$ pounds, 9 were children of Americans.

Of the 5 weighing $9\frac{3}{4}$ pounds, 4 had American mothers.

Five of those which weighed 10 pounds were children of Americans.

The one weighing $10\frac{3}{4}$ pounds, as well as that weighing $12\frac{1}{2}$ pounds, were children of Americans.

In other words, of the 54 children which weighed 9 pounds and upwards, 31 had American mothers; although three-fourths of all the children born in the hospital had foreign parents.

The 4 children weighing less than 3 pounds were premature and *still*. Those weighing 3 pounds were born alive; one of them "died soon after leaving the hospital," which occurred ten days after its birth.

10. *The comparative length of the Males and Females in 399 cases.*

No. of inches,	14 $\frac{1}{2}$	15	16	16 $\frac{3}{4}$	17	18	18 $\frac{1}{2}$	19	19 $\frac{1}{4}$	19 $\frac{1}{2}$	20
Males,		1			2	3	3	25	1	3	38
Females,	1		1	1	1	5	2	10		4	33
No. of inches,	20 $\frac{1}{2}$	20 $\frac{3}{4}$	21	21 $\frac{1}{2}$	22	22 $\frac{1}{2}$	23	23 $\frac{1}{2}$	24	25	25 $\frac{1}{2}$
Males,	5	1	53	5	43	7	10	2	6	1	1
Females,	3		48	5	38	3	10	1	1	1	

In 399 cases, 230 were males and 169 females.

The greatest length seen in the males was $25\frac{1}{2}$ inches. The least was 15 inches.

The greatest length in the females was 25 inches. The least was $14\frac{1}{2}$ inches.

The average length of the males was 18 inches. The average length of the females 20 inches.

It will be seen that in this table the average length of the females is greater than that of the males, thus differing from the usual statistical tables.

11. *The length of the Funis in 229 cases.*

Length,	4 $\frac{1}{2}$	9	10	11	14	15	16	17	18	19	20	21	22	23
No. of cases,	1	1	1	1	1	1	4	7	12	9	8	11	19	22
Length,	24	25	26	27	28	29	30	31	32	33	34	35	36	43
No. of cases,	28	11	25	18	9	13	14	4	5	2	1	2	1	1

It will be seen by the above table that the most common length was two feet; the next in frequency was 26 inches, and the next 23 inches. The longest being 43 inches, and the shortest $4\frac{1}{2}$ inches. Such a diversity of opinion exists with regard to the length of the cord that I shall refer to an interesting paper upon this subject by Churchill.* In his communication he presents three tables of measurements of the funis, by Dr. Adelman, of

Fulda, Professor Henne, of Königsburg, and himself. In the first table, made up of 40 cases, the most common lengths were 18 and 16 inches. In Professor Henne's table of 130 cases, 22 and 20 inches were most frequent; while the most common lengths in Churchill's table, composed of 212 cases, was 18 inches, and next in frequency two feet. Negrier† measured 166 cords—28 were 17 inches long, 112 were from 17 to 25½ inches long, and 26 above that length. In a table of 89 cases, published by myself in the paper previously referred to, cords of 18 inches in length were most common, and next those of 27 inches.

The longest cord in either of the tables presented by Churchill is 54 inches, and the shortest 12 inches. In the table I now present, one cord is observed 10 inches in length, one of 9 inches, and one only 4½ inches long. From the fact that in the three tables contained in Churchill's paper, together with that of Negrier and my own previously published, comprising together 537 cases, not a case occurs of a cord measuring less than 12 inches; it would appear that shorter cords must be quite rare. The cords measuring 9 and 10 inches in the table here published were measured by the attending accoucheur; the cord of 4½ inches was measured by the nurse of the institution, and Dr. Putnam, who was the physician of the hospital at that time, stated to me that he has no doubt of the accuracy of the measurement.

Although several writers speak of the umbilical cord measuring from a few inches to six feet, cases of the latter length must be very unfrequent. Dr. George N. Thompson of this city has lately published a case in the *Boston Medical and Surgical Journal*,‡ in which the cord measured 5 feet and 9 inches in length.

In the *British and Foreign Medico-Chirurgical Review* for April, 1850, I find the following notice of a funis of remarkable length, copied from *Caspar's Wochenschrift*, 1849, No. 41, reported by Dr. Neugebauer.

"After a natural labour, the funis was found coiled round the child's body six times. It was of normal structure, but very thin, and is supposed by the author to be the largest on record. It measured 67½ Scheleswich inches (1.653 metre). Busch, in 2077 births, found only four examples of the funis measuring from 40 to 46 inches. Osiander mentions one of 50 inches, as a most rare occurrence. Siebold indicates one of 52; Michaelis one of 53; Baudelocque one of 57; one of the last length having also been observed once in 12,329 births at the Prague Lying-in Institution. The longest previous to the present one was indicated as measuring 60 inches by Michaelis."

Dr. Tyler Smith exhibited to the Westminster Medical Society (Jan. 12, 1850) a funis, which, measuring from the attachment to the umbilicus to its insertion into the placenta, was 59½ inches in length.

* Dublin Journal of Medical Science, March, 1837, p. 21.

† On the length and strength of the umbilical cord at the full term of pregnancy.—*Edin. Med. & Surg. Journ.* April, 1846, p. 556.

‡ Vol. 42, No. 22, p. 451.

12. *Weight of the Placenta in 151 cases.*

Weight,	8oz.	10	12	1lb.	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{3}{4}$	2	2 $\frac{1}{4}$	2 $\frac{1}{2}$
No. of cases,	2	1	12	26	41	38	16	9	2	5

The above table shows the weights most frequently met with were 1 $\frac{1}{4}$, 1 $\frac{1}{2}$ and 1 pound; most writers upon midwifery who refer to this subject consider the average weight as about one pound.

Of the 3 cases in which the placenta weighed less than 12 ounces, the child weighed in one case 5 $\frac{1}{2}$ pounds, in one 7 pounds, and in another 7 $\frac{1}{2}$ pounds.

Of the 15 cases in which the placenta weighed less than a pound, the child weighed in one case 3 $\frac{1}{2}$ pounds; in one 4 $\frac{3}{4}$; in one 5 $\frac{1}{4}$; in four 5 $\frac{1}{2}$; in two 6; in two 6 $\frac{1}{2}$; in one 7 pounds; in two 7 $\frac{1}{2}$; and in one 9 $\frac{1}{2}$ pounds.

Of the 16 cases in which the placenta weighed 2 pounds and upwards, the child weighed in one case 6 $\frac{1}{4}$ pounds; in one 7; in one 7 $\frac{1}{2}$; in three 8; in three 8 $\frac{1}{2}$; in one 9; in three 9 $\frac{1}{2}$; in one 9 $\frac{3}{4}$; in one 10; and in one 12 $\frac{1}{2}$ pounds.

Of the 5 cases in which the placenta weighed 2 $\frac{1}{2}$ pounds, the children weighed in one instance 6 $\frac{1}{4}$ pounds; in two, 8 $\frac{1}{2}$; in one, 9 $\frac{1}{2}$; and in one, 12 $\frac{1}{2}$ pounds.

The placenta were weighed in but one case of twins, and in this instance they weighed 2 $\frac{1}{2}$ pounds; the twins weighing together 12 $\frac{1}{2}$ pounds.

From these data it appears that the weight of the placenta is not in all cases proportionate to the size of the child, although, generally speaking, there is undoubtedly a great correspondence. A remarkable instance of the disproportion which sometimes exists between the size of the child and that of the placenta is related by Dr. Kennedy* of Dublin. He says, "The placenta occupied more than half the surface of the uterus, and was as large as that in a case of triplets, which had been recently in the hospital."

13. *Insertion of the Funis.*—In 387 cases in which the insertion of the funis is recorded, it was inserted in the centre of the child's body 197 times. In the remaining 190 it varied from one-quarter of an inch to, in one instance, two inches from the middle parts. That the mother had concluded her pregnancy in this case may be believed from the fact of the child's weighing 9 $\frac{1}{2}$ pounds.

14. *Twins.*—In 451 cases, there were five cases of twins. Three of these occurred in the first pregnancy. In one instance, the patient was seven and a half hours in labour; her children, a male and female, each weighed 4 $\frac{3}{4}$ pounds, and measured 17 inches. The placenta were united.

In a second case, the patient was twenty-six years of age; the labour oc-

* Dublin Journal of Medical Science, November, 1838. Also, London Medical Gazette, Dec. 1839, No. 11.

cupied two and a half hours. The children, females, *both presented the head*; one weighed 6 pounds and one $6\frac{1}{4}$ pounds. Two placentæ.

In the third case, the patient, aged twenty-seven, had a very feeble constitution; had not been healthy for many years. Six months previous to entering the hospital, feet and legs began to swell, and at the time of her entrance had general anasarca. A fortnight before her entrance, she had an attack of cholera, owing to imprudence in diet, which at times was urgent and continued up to the time referred to. Three days after her entrance, labour pains came on and continued five hours, when two male children were born weighing $4\frac{1}{2}$ and 6 pounds. The placentæ were united. The mother was at first much exhausted; for a time she was exceedingly feeble, but under tonics and diuretics the anasarca subsided, and in a month she was discharged "very comfortable." In this case the second child was born still.

In the remaining cases, one woman, was forty years of age, and this was her fifth pregnancy. After a labour of an hour and a half, she was delivered of two males weighing $4\frac{3}{4}$ and 6 pounds. There was but one placenta.

In the other case, the woman, thirty-seven years of age, was in her seventh pregnancy. After a labour of three hours, a male and female were born; the former weighing 7 and the latter 6 pounds. The first presented the vertex, and the latter the feet.

15. *Presentations in 440 cases.*

PRESENTATIONS.	Vertex.	Breech.	Feet	Face to pubis.	Hand to head.	Hand to face.	Foot and head.	Vertex and funis.	Arm and funis.	Placenta.
	425	5	2	1	2	1	1	1	1	1

Three of the *breech presentations* occurred in the first pregnancy. In all of the cases the children did well; and in two of them, the mother. In the third case, the woman, 28 years of age, entered the hospital with general anasarca; the second day after her entrance, was delivered of a male child, weighing $5\frac{1}{4}$ lbs.; having been in labour 12 hours. On the second day after her confinement, she complained of general distress, and particularly of pain in the left hypochondrium, was unable to lie except on the right side, and with shoulders raised; occasionally vomited about a teaspoonful of blood. The right back was dull on percussion. The abdomen was somewhat tender—fluctuation distinct. Died on third day after delivery. No autopsy allowed.

Of the remaining two breech presentations, one occurred in a fifth pregnancy—and the other in a second pregnancy. In the former, the woman was 29 years old—and nothing abnormal had happened in her former labours. Now, the breech and funis presented; and after a labour of $6\frac{1}{2}$ hours she was delivered of a male child, weighing $9\frac{1}{2}$ pounds. During her labour, after the passage of one leg of her child, she had several attacks of fainting, and her

pains though severe were not effectual. Several fainting fits also followed upon her delivery. On the third day after her confinement, she complained of a swelling on the inside of the right thigh about the size of a dollar, which was followed by phlegmasia dolens, from which she recovered and in six weeks left the hospital.

In the latter case, the woman was aged 30; she was in labour $7\frac{1}{2}$ hours, and gave birth to a living male child weighing $6\frac{1}{4}$ pounds.

In both of the *presentations of the feet*, the child was still. In one of the cases, the woman was twenty years of age, and this was her first pregnancy. She was $9\frac{1}{2}$ hours in labour; and her child, which was a male, weighed $6\frac{3}{4}$ pounds. The child was alive two or three minutes before it was expelled, but did not breathe afterwards, and could not be resuscitated, although numerous and long-continued efforts were employed.

In the other, the patient was twenty-seven years old, and this was her second pregnancy. She was in labour seven hours—her child, a female, weighed $6\frac{3}{4}$ pounds.

But one case is registered of the *face to the pubis*—this was in a second pregnancy; the patient being thirty-two years old. The labour occupied $6\frac{1}{4}$ hours—the child, a male, weighed $4\frac{3}{4}$ pounds.

Two cases are recorded of the *hand to the head*; both terminated favourably. In one of these, the patient was aged twenty-seven, and this was her first pregnancy; a loop of the cord protruded, and no pulsation could be felt in it. This was carried up over the vertex and occiput, and forced up behind the symphysis pubis. After a labour of $13\frac{1}{2}$ hours, a female child weighing 6 pounds 13 ounces was expelled; at first its respiration was very feeble, but this was at last perfectly restored.

In the other case, the patient was aged twenty-five years, and this was her sixth pregnancy. The head was delayed somewhat at the orifice, notwithstanding the pains were very forcible. Besides the right hand of the child being applied to the head, the cord was also around the neck. The child, a male, weighed $7\frac{1}{4}$ pounds.

One case occurred in which a *hand was applied to the face*. The patient was twenty-five years of age; the number of her pregnancies not recorded. Labour continued 9 hours—the child, a male, weighed $7\frac{3}{4}$ pounds.

The *left foot and head* presented in one case. The labour continued 88 hours; the child, a male, weighed $5\frac{1}{2}$ pounds.

In a single case, the *vertex and cord* presented; the patient was twenty-five years of age, and this was her first pregnancy. The labour continued 26 hours after the rupture of the membranes. The child, a female, weighed 7 pounds and 14 ounces; delivery by craniotomy. (See *Instrumental Labour*.)

An *arm with the funis* presented in one case. The patient was thirty years of age, and this was her third pregnancy. After being $58\frac{1}{2}$ hours in labour, the child, a male, weighing $7\frac{1}{2}$ pounds, was turned and delivered *still*.

The *placenta* presented in only a single case. The patient was twenty-six years of age, and this was her third pregnancy. Three days previous to delivery, she had slight hemorrhage. The hand was passed up at the side of the placenta, and the child delivered by turning; but little blood was lost. Both mother and child did well.

16. *The number of cases in which the Funis was around the Neck.*—In 444 cases, the cord was around the neck in 31 instances.

In 21 cases it was once around the neck.

In 7 cases it was around the neck twice.

In 1 case it was around the neck twice, and passed under the right arm.

In 1 case it encircled the neck three times.

Unfortunately, in only 9 of these 31 cases, was the funis measured.

In 5 of these cases, the funis was once around the neck, and measured in 4 cases 26 inches, and in one case $27\frac{1}{2}$ inches.

In 3 of the cases, the funis was twice around the neck, and measured in one case 32 inches, in another 35, and in the other 43 inches.

In the case in which the cord encircled the neck three times, it measured 30 inches.

The length of the labour varied in these cases from $1\frac{1}{4}$ hour to 37 hours, as follows :—

No. of hours	1 $\frac{1}{4}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4	5	5 $\frac{1}{2}$	6 $\frac{1}{2}$	7	7 $\frac{1}{2}$	8	8 $\frac{1}{2}$	9 $\frac{1}{2}$	10	11	12	13	14	15	16 $\frac{1}{4}$	17	37
No. of cases	1	2	2	2	1	2	1	1	2	1	2	1	2	1	2	1	1	1	1	1	1	1	1

From the above data, *the length of the funis* and the *duration of the labour*, it would not appear that the process of delivery had been interfered with by the position of the funis around the neck.

As regards the child in the 31 cases referred to, it did well in 28 cases. In several cases, it cried immediately upon being born.

In one case where it was resuscitated, the record states “funis twice around the neck, has no pulsation; child was washed in alcohol, cried, and was well in a few minutes.”

In a second case, the cord was very tightly coiled around the child's neck, so that previous to the exit of the shoulders, blood flowed freely from its nose and mouth; and the child was not perfectly resuscitated for nearly half of an hour.

Of the three still children, in which the funis encircled the neck, one was of a second labour, weighed $6\frac{1}{4}$ pounds, and nothing appears in the record to account for its death. “There was no pulsation in the cord, nor any other indication of life. The breast was sprinkled with alcohol, friction was employed, with artificial respiration, but without effect.”

In the second case, the woman was thirty-seven hours in labour. Four days previous to her delivery, she was attacked *with bearing down pains followed by flooding*—and lost about a pint of blood at that time. The record

does not show whether the motion of the fœtus was felt after that time or not.

In the third case, the umbilical cord was around the neck, and under the right axilla. This was a second pregnancy, and the woman thirty-four years of age. The child, a male, weighed $9\frac{1}{2}$ pounds. Labour continued 28 hours, and was terminated by the exhibition of ergot.

The above cases serve to corroborate the opinion of Churchill, that when the cord is of the ordinary length, labour is not delayed by its being coiled around the neck of the child. And the experience of Cade* respecting the fœtus being destroyed by apoplexy, produced by the pressure of the funis around the neck—and also the experiments of Negrier “that the umbilical cord is both long enough and strong enough to produce strangulation in a new-born infant, by being twisted round its neck after the head is delivered.”

NOTE.—As the question was asked by several gentlemen, upon the reading of this communication, “How did Negrier arrive at his conclusions?”—and as others upon perusing it may be disposed to make similar inquiries, I present the following details from the *Edinburgh Medical and Surgical Journal*, April 1st, 1841, page 556: “A girl of bad character was accused of having strangled her child by means of the umbilical cord, before it was completely expelled from the uterus. As there was a difference of opinion amongst the medical men as to the possibility of the umbilical cord possessing sufficient strength or length for this purpose, Dr. Negrier performed a number of experiments for the purpose of ascertaining the strength of the cord, and measured it in 166 cases to arrive at its average length.

“Of the 166 cases, it was remarked that in 144 the umbilical cord floated free within the uterus; in 20 it was rolled around the neck of the child; in one it was round the shoulders; and in one between the thighs, the breast presenting in this case: 98 of the umbilical cords were not varicose, and 68 were varicose. As to length, 28 were 17 inches long; 112 were from 17 to $25\frac{1}{2}$ inches long, and 26 above that length.

“The resistance of the umbilical cord was ascertained by attaching weights to one end of the cord until it ruptured, the weights being always attached to the placental extremity. About one-half of the cords were passed by their middle over a round bar, and weights attached till they gave way; the other half of the number were rolled once and a half round the same bar, covered with linen, so as to bring it to the diameter of a child’s neck, when it was found that these supported a greater weight than those over the plain bar. The varicose umbilical cords were ruptured with a lesser weight than the sound cords, and generally gave way at one of the varicose dilatations. The mean weight which these varicose cords supported before they gave way was eight pounds Troy; the most resistant supported fourteen pounds seven ounces. The medium resistance of the non-varicose umbilical cords was four-

* Reflexions et observations sur l’entaillement du cordon ombilical autour du cou du fœtus.—*Encyclographie des Sciences Médicales*. Avril, 1841.

teen pounds four ounces Troy; but one cord required twenty-five pounds three ounces to rupture it.

"Dr. Negrier next made a few experiments to ascertain what weights suspended round the neck of an adult would produce such a degree of compression as to cause unpleasant feelings or strangulation. A weight of eight pounds was suspended to a cord passed once and a half round the neck, the back of the neck being upwards. The respiration was rendered difficult, and the brain strongly congested in two minutes. Vertigo commenced soon afterwards. The respiration, however, could be continued with difficulty. When the face was placed upwards, the effects of the congestion were more rapid; the respiration was much impeded, but was still possible; but Dr. Negrier thought that death would have resulted if this position had been maintained for a quarter of an hour.

"When the experiment was made with a weight of thirteen pounds, and the face downwards, rapid congestion of all the vessels of the head took place; the eyes became injected, and filled with tears; the respiration was very laborious, but was still possible. It was, however, dangerous to continue the experiment for two minutes.

"When the same experiment was repeated, but with the face looking upwards, the strangulation was almost complete. Respiration was so impeded that Dr. Negrier thinks death would have resulted in less than five minutes.

"From these facts, he infers that the umbilical cord is both long enough and strong enough to produce strangulation in a new-born infant, by being twisted round its neck after the head is delivered. A force applied to a cord equal to thirteen pounds would strangle an adult in five minutes, and a much less force would strangle a child."

17. *Instrumental Deliveries.*—In 451 cases, eight were delivered by the forceps and two by craniotomy.

Of those delivered by the forceps, six were in cases of the first pregnancy, one in a second pregnancy, and one in a fifth pregnancy.

Five of the eight children were born alive; of the remaining three, one patient was aged 32; this was her second pregnancy, and the child presented with the face to the pubis. After a tedious labour of twenty-five hours, a male child was delivered weighing $6\frac{1}{2}$ pounds.

In a second case, the patient was 32 years of age, and this was her first pregnancy—at the expiration of twenty-seven hours her delivery was completed—the child, a male, weighed $8\frac{3}{4}$ pounds. "It had apparently been dead for several hours."

In the third case, the mother, aged 24, was in her first pregnancy; after a labour of twenty-eight hours she was delivered of a male child which weighed 7 pounds.

Of those cases in which craniotomy was performed, one patient was 28 years of age, and this was her first pregnancy. After thirty-six hours of

tedious labour, the head was perforated, and "the child was delivered with a great deal of difficulty, requiring much force to extract it. Child was very offensive, appearing to have been dead some time." The child, a male, weighed 7 pounds.

Previous to the operation being performed, she had become feverish and restless; the pulse was 100. The external parts were swollen and tender; a copious and offensive discharge flowed from the vagina, and vomiting was present. After delivery, the uterus at first contracted but little, and quite a profuse hemorrhage ensued, which was controlled by pressure, the application of ice, and administration of ergot. In about an hour her face became pale; the pulse was 120—the respirations were 40 in a minute, and there was great restlessness. In a few hours, the pulse became too rapid to be counted, the surface was cold, the respiration laboured and stertorous, and she gradually sank and died in about twenty hours after her delivery.

In the second case, the patient, 25 years old, upon her entrance to the hospital reported herself as never having enjoyed good health, and as having aborted once at her fifth month. On the 30th of December, 1837, the records state her as having had "distinct preparatory pains during latter part of night for a week past." On the 26th of January, "patient has had for some time a very considerable foul discharge from vagina." February 6th, "on examination at 9 A. M., os uteri was found dilated to a small extent." She continued to have more or less severe pains until the night of the 17th, when the membranes broke. Here follows Dr. Putnam's report, 288 hours after the uterus began to dilate: "At 9 A. M. (18th), os uteri dilated freely, vertex presenting with funis; no pulsation in funis nor in foetal heart; pains frequent and strong; at 12 M. no progress; abdomen tender on pressure; 4 P. M., complains of headache; some progress in labour; pains continue; *head perforated*. After the collapse of the bones, the pains became stronger, and the labour was finished in an hour and a half. Female, 7 pounds 14 ounces.

"9 P. M. Has slept a little; says she feels comfortable; no headache; pulse 102; some thirst; some after-pains. R.—Tinct. opii, gtt. xx; sinapism to abdomen.

"19th. Slept well in night. Flowing considerable, but not excessive; after-pains not severe. In other respects comfortable. Pulse 66."

On the day after delivery peritonitis supervened, and for several days she was very sick, but gradually recovered, and left the hospital on the 30th day of March, "doing well."

18. *Still-born*.—I find twenty-seven cases of delivery, in which the child was not born alive.

One of those was an instance of arrested development.

Five were cases of premature delivery.

In two cases, craniotomy was employed.

Three were delivered by the forceps.

One was a presentation of an arm and the funis.

Two were presentations of a foot.

One was a presentation of the breast.

In one the mother had constant convulsions for two hours previous to delivery.

One child was putrid when delivered.

In one case no physician was in attendance.

One was the second expelled of twins.

Of the remaining eight cases, two occurred in the first pregnancy, and six in the second pregnancy.

Of those of the first pregnancy, one patient, aged twenty-four years, had a tedious labour of thirty-seven hours, and was at last delivered by the assistance of ergot.

Of those in the second pregnancy, one aged thirty-four, after a labour of twenty-eight hours, was delivered of a male child weighing $9\frac{1}{2}$ pounds, with the umbilical cord around the neck, and under the right axilla.

In another case, the woman aged twenty-four (who had had a still-born child a year and a half previously), after nine hours labour, was confined with a male weighing $9\frac{1}{2}$ pounds. The records of the case thus explained the death of her child. "The head after successive pains passed through the labia; but the body was retained through second pains from the great breadth of the shoulders, the passage of which was assisted by the hand. The left hand laid under the chin, with an arm on the thorax—the funis having a bend and lying under it—thus making a great resistance to the circulation."

The case of *arrested development* occurred in a twin. After the birth of a healthy male child weighing more than 11 pounds, "a small opaque substance came away which proved to be a fœtus enclosed within its own proper membranes, which were extremely delicate. The length five inches. The bones of the head were distinctly ossified. Both scapulæ were firm and hard; the left having the bones of the arm and fingers; the right having the humerus only. There were no lower extremities, the pelvis was imperfect. The vertebræ of the spine was distinct, as also the ribs. The whole being a mass of adipocire."

19. *Lacerated Perineum*.—I find but four cases of *lacerated perineum* spoken of, and these were all in the first labour.

In one case, the head was delayed a long time by the resistance of the external parts; the pains in the meanwhile were vigorous, and although the perineum was firmly supported, it suffered a slight laceration when the head finally passed. The records read, "it may be well to add that the patient was dwarfish, and the child rather large." The child, a female, weighed $8\frac{1}{2}$ pounds.

In a second case, where the forceps were applied, there was a slight degree of laceration, although the perineum was firmly supported.

In a third case, the laceration extended two-thirds of the space between the vagina and anus. It was probably torn by the passage of the shoulder, which immediately followed the head, while the perineum was unsupported in consequence of the accoucheur's attention being directed to the condition of the umbilical cord which was protruded by the side of the head.

The fourth case of laceration occurred in a patient whose perineum was left unsupported to test the utility or inutility of such a course.

20. *Diseases.*—In the 451 cases of confinement, six cases of peritonitis occurred; three of convulsions; two of diarrhœa; two of utero-hemorrhage; one of phlegmasia dolens; one of ascites; one of neuralgia; one of typhus fever.

Neither of the cases of *convulsions* occurred during the period of my attendance, and, as I should injure the reports by an abstract, they are copied entire from the hospital records. All the cases of *peritonitis* terminated favourably, as well as those of *hemorrhage*; that of *phlegmasia dolens*; that of *neuralgia*; and one of the cases of *diarrhœa*. While the case of *ascites*, one of the cases of *diarrhœa*, and the case of *ship fever*, were fatal.

The case of *dropsy* occurred in a woman twenty-eight years of age, who entered the hospital pregnant with her first child. Her lower extremities were anasarcaous throughout their entire extent. A fortnight after her entrance, after a labour of twelve hours, she was delivered of a child weighing $6\frac{1}{2}$ pounds. On the next day was comfortable, but *œdema of the face* noticed. On the second day after her confinement, complained of general distress, and particularly of pain in left hypochondrium; was unable to lie except on right side, and with shoulders raised. Occasionally vomited a small quantity of blood. Respiration was somewhat laboured on percussion; right back was dull. Respiration coarse, especially at the upper two-thirds. Left back presented nothing abnormal. Abdomen somewhat tense; fluctuation distinct. On the next, the third day after delivery, sat up in bed, exceedingly pale. Occasionally vomited blood, but expressing herself as much more comfortable. Died at noon. Autopsy not allowed.

The patient who died with *diarrhœa* was twenty-seven years of age, and this was her first pregnancy. She had suffered from diarrhœa for many weeks in the early part of her pregnancy, and in a greater or less degree during the whole period of it, frequently having copious bloody dejections. Was delivered, July 29th, of a child weighing eight pounds. Two days after delivery, diarrhœa reappeared, and she died on the 10th of August. The autopsy exhibited, at the lower part of the large intestines, within two feet of the anus, two groups of ulcers embracing the whole circumference of the intestines. The lower cluster, containing several large ulcers, was situated about four inches below the upper. One ulcer in this cluster was $1\frac{1}{2}$ inches in length by one inch in breadth; there were several other ulcers in both groups an inch in diameter. These ulcers were rough, ragged, dark, and foul; irregular in

form, having edges somewhat thickened, deep, extending in some places through the muscular coat, and without granulations. The muscular and nervous coats of the rectum seemed to be much thickened, and the volume of the intestines greatly increased.

The patient who died of *typhus fever* entered the hospital November 22d, just after her arrival from Ireland. She was confined the same day, and was comfortable until the fever showed itself. On the 29th of November, she was sent to the City Hospital at South Boston, and there died.

The case of *neuralgia* was very severe and protracted, although at last relieved.

Julia Scannel, aged 28, in her fifth pregnancy, entered hospital June 29th, 1844. On the 23d of August, after a tedious labour of $35\frac{1}{2}$ hours, owing to the head being impacted in the brim of the pelvis, she was delivered by the forceps of a living male child weighing $9\frac{3}{4}$ pounds.

25th. Complained of considerable soreness in abdomen, which is much increased by pressure; pulse 70. Fomentations of poppy-heads.

26th. Much more comfortable.

28th. Complains of pains in both lower extremities, and also in right shoulder. Spts. of camphor to be applied to limbs. Pulv. ipecac. et opii gr. viii.

Sept. 1st. For the last two days, pain has been confined to the right lower extremity; upon the instep, the sole of the foot, and slightly, comparatively, operating in the calf of the leg. No swelling nor heat of the limb at any part. Rub \mathfrak{zj} of veratrine ointment, \mathfrak{zj} to the \mathfrak{zj} of lard, upon the lower portion of spine, and also upon the instep.

5th. Relieved slightly upon the application of the veratrine; pain very severe at night, keeping herself and the other patients in the room with her.

From this period, she complained constantly of more or less pain in this limb, greatly aggravated at night—relieved only temporarily by hyoseyamus and conium internally, opiate enemata, and aconite, veratrine, antimony, croton oil, &c., externally applied.

Causing great inconvenience to the inmates of the hospital by her continual complaints, and the nature of her disease being such as would probably cause it to continue for a considerable length of time, and as she could receive the same attentions elsewhere, the attending physician advised her removal; and she left, Sept. 14th, for the Massachusetts General Hospital, where she remained until the following November, when she was dismissed, relieved.

21. *Convulsions*.—I. Ruth Pinkham, æt. 30, seamstress, entered Jan. 14th, 1833. Has had two children. A fortnight previous to the birth of her first child, was attacked with convulsions; child still-born. Second labour natural. Lost a sister by convulsions. Is subject to headache—now face and limbs much cedematous. Catamenia about May 7th.

Jan. 31st. This morning, complains of headache; mind much agitated last evening; venesection $\mathfrak{z}viii$; at evening, head not being relieved, sulphate of magnesia in infusion of senna. Medicine acted powerfully in evening and night.

Feb. 1st. At half past 7 A. M., in bed, was attacked with convulsions. Was bled immediately $\mathfrak{z}xxii$, and had cold applications to head. Became sensible in about fifteen minutes, but not conscious of what had happened.

Was very faint and very thirsty, and complained of a strange feeling in her head. At 9 A. M., again convulsed; was bled ℥xviii . Sinapisms were applied to feet. On examination, os uteri found soft, not dilated. At $10\frac{1}{4}$ A. M., again convulsed. Had infusion of valerian ℥ss to Oj of water. Assa-fetida grs. xxv in enema. Bladder of ice to head. In interval of fits, mind is rational. At $11\frac{1}{2}$ A. M., convulsions recurred; again at $1\frac{1}{4}$ P. M.; fit more violent; venesection ℥xii . Before recovery from this fit, again attacked at $2\frac{1}{2}$ P. M.; venesection ℥vi . This fit the most severe, and followed by complete syncope. A fall of water directed upon head for fifteen minutes, and afterwards cold applications as before. Patient now became quiet—insensible, or with difficulty roused. At 3 P. M., os uteri somewhat dilated; pain slight. At 4 P. M., had in infusion ergot ℥j ; in ten minutes, ℥ss , repeated in twenty minutes, and again in twenty more. Pains came on; labour natural, easy; completed at 9 P. M. Patient rational and perfectly sensible during the last stages; placenta came away ten minutes after child; uterus contracted well; child still-born; male; weight seven and a half pounds; length nineteen inches; middle point one and a half inch above umbilicus. Patient continued tranquil about an hour; expressed great joy at being through her labour; was removed to another bed, and again attacked with convulsions. At $11\frac{1}{2}$ P. M., fit recurred; the two last fits not so violent as the two preceding, but patient much exhausted; cold and sinapisms renewed; a blister six by four inches applied to back of neck; assa-fetida grs. v given in pill, to be repeated every two hours to grs. xx; calomel grs. v now in pill, and to be repeated in two and four hours.

2d, 9 A. M. Has passed night in a state of drowsiness; blister well drawn; pulse 120, intermittent (this noticed previous to convulsions); is disposed to sleep; assa-fetida grs. v. 9 P. M.—Heavy sleep during day; when roused, answers questions; medicine has acted on bowels. At 5 P. M., skin being very hot, had ipecac. gr. j. At $5\frac{1}{2}$, nit. potass. gr. v, to be repeated every four hours to gr. xxv, unless it acted upon the bowels; has taken gruel; now to have an enema of starch and ol. ric. $\text{āā } \text{℥j}$.

3d. Slept during night; three dejections; says she feels very comfortable; pulse 100; tongue bitten during convulsions; mouth affected by calomel.

9 P. M. Has been awake the greater part of day; mind clear; not conscious that she has had convulsions.

4th. Night good; pulse 100; sits up in bed with ease; wishes tea and cracker.

5th. Doing well; more strength; cheerful; chamomile tea for mouth. Ol. ric. ℥ss .

6th. Three dejections; has milk; cannot read, letters appearing confused.

7th. Last evening had pain in abdomen, with swelling and tenderness. Fomentations of chamomile flowers applied with relief.

8th. Last night had ext. hyosey. gr. ij; slept well; one dejection.

9th. Gains strength daily; mouth better; has at times headache, pain passing from over eyes through head backwards.

25th. Has been daily improving; eyesight better, not perfectly restored; has palpitation on sudden exercise; pulse continues to intermit.

March 4th. Discharged as a wet-nurse.

II. Elizabeth Knight, æt. 33, entered Feb. 19th, 1844. Health good; first pregnancy; last menstruation June 10th; period of quickening, Oct. 24th.

Feb. 22d. Was called to prescribe for her on account of vomiting. Lying on bed in good spirits (temperament lively). States that, on Sunday evening, February 11th, had eaten very abundantly of mince pies and other gross food.

Vomiting has continued from that time to the present. Tongue somewhat furred; pain in bowels; no febrile affection; has already had ol. ric. ʒj, and an enema of soap and oil.

23d. Labour commenced 7 A. M.; child born 12½ M., Feb. 24th; male; weight seven and a quarter pounds. During and immediately after labour, there was considerable hemorrhage; placenta removed at once, and without difficulty. The hemorrhage was considerable, causing faintness, which continued for twenty-four hours; pulse frequent and feeble.

26th. Yesterday afternoon (according to report of nurse), felt numbness in right leg, and somewhat in right arm. During the night, was frequently awakened from sleep by a spasmodic starting of the head; the same sensations continuing in the leg and arm; now, is able to move both arms, but somewhat stiffly; fingers move rigidly; while in bed can draw up both lower limbs with ease (according to report of nurse, both the right leg and right arm were paralyzed during the night); pulse feeble; bowels free. Cold applications to head; blister to back of neck.

27th. Moves right arm and right leg; paralysis of left leg and left arm; sensibility to touch natural; at times, the head has a jerking motion, as if the patient were affected with violent chills; mind entirely clear; no paralysis of face; no pain in head or elsewhere; yesterday endeavoured to walk from the bed to the fire, but would have fallen without assistance; in the night, some delirium; now, pulse 120, feeble; skin cool; bowels free. Blister to be continued on neck.

28th. 9 A. M. Delirious in night; no sleep. Now has pain on top of head; paralysis of left side of face; the tongue, when protruded, forms a curve, the apex pointing to the left; pulse 120; mind clear at this moment, but she is inclined to talk a great deal, and at times incoherently; utterance somewhat indistinct. Pulv. ipecac. gr. v every fourth hour, unless vomiting.

12 M. Has had involuntary discharges of fæces and urine. Has taken three powders of ipecac. After the third, vomited, chiefly some gruel. Skin moist. Pulse 120; softer, more full. Continue ipecac. unless free vomiting.

4 P. M. Has continued the ipecac.; no more vomiting. Was quiet until 3 P. M. Since then, delirious; tries to get out of bed. Frequently screaming. Tinct. opii gr. xxx. Head turned towards *right* side. Mind perfectly clear. Pulse 150; feeble. No dejection.

8 P. M. Frequent convulsions, lasting for space of five to ten minutes; affecting the right extremities in some degree, but the left extremities and trunk violently, and attended with severe pain. Asks to be "held tight," and have pressure made upon the back. No nausea; much thirst. Pulse 160; tinct. valerian and hops, āā ʒss, at 9 o'clock and every fourth hour.

29th. 9 A. M. During night, the convulsions continued, occurring every hour or two, and lasting ten to fifteen minutes. Slept during the intervals of the convulsions. Now, pulse 150. Somewhat less feeble; convulsions frequent. Complains that the spasms cause pain in the eyes. Head turned to the *left* side. Intellect clear. Continue medicine p. r. n.

1 P. M. Cheeks flushed. Pulse somewhat more full. Thirst as before. Omit tinct. valerian and hops. Give a Rochelle powder once in three or four hours. Lemonade.

8 P. M. Convulsions almost incessant. Mind clear, both during their continuance and in the intervals. Pulse 150, feeble. Pulv. ipecac. et opii grs. x at night.

March 1st. First part of the night comfortable. At about 12, was faint. Respiration heaving; sighing. Extremities cold. Since 12 o'clock, convul-

sions less frequent. No dejection. Urine free. Now complains of pain in muscles of neck (right side) which are strongly contracted. Mind clear. Skin cool. Face pale; livid. Pulse 130. Infus. sen. comp. ℥iii. 12 M. Skin moist and warm. Pulse 125; of a better character. Says she "feels better." Paralyzed extremities painful on pressure; even slight touch. Motion of the arm causes pain in the shoulder joint.

8 P. M. Mind clear, but considerably excited. Restless; complains of pain in right wrist, "small of back," and through hips. Thirst intense. Two dejections in the afternoon. Tongue moist. Pulse 140. Pulv. ipecac. and opii gr. viii at night. Infus. valer. et humuli p. r. n.

2d. Slept about an hour after the opiate. Then had a convulsion; and another at 6 this A. M., which lasted two hours. The convulsions affect, at present, chiefly the muscles of the face, throat, and chest, greatly impeding respiration and deglutition. Says she "feels better." Mind at times not clear. Memory good; perfect; but is more frequently delirious. Motions of right arm stiff. Tongue protruded with more firmness. Pulse 100; tolerably firm. Urine involuntary. Carb. ammon. gr. ii every third hour.

6 P. M. Convulsions of muscles of chest and neck nearly all day; none of upper or lower extremities. Coldness from feet to middle of trunk. No loss of consciousness.

3d. No sleep in night. Convulsions almost incessant, chiefly of neck and chest. Less thirst; one dejection in the night. Now skin warm. Face occasionally flushed. Pulse 120; sufficiently full. Omit carb. ammon. Pulv. ipecac. gr. iii every fourth hour; omit, if vomiting. 5 P. M. Vomited after the powder; convulsions occur every ten or fifteen minutes; limited almost entirely to the left side of throat and face; muscles of the chest very slightly affected. Articulation more difficult; skin quite warm; pain in the head; pulse 130. Pill. assafoet.

4th. Convulsions all the night; no sleep; pupils dilated. Extremities at times cold. Asks for wine; may take it. Omit the pill on account of the difficulty of swallowing.

6 P. M. Retains consciousness; has no vision; pain in the head; bloody mucus in dejections. Nurse reports a discoloration about sacrum. Mist. assafoet.

5th. 7 A. M. Very little sleep at night; convulsions almost constant, so much so as to prevent swallowing or articulating. Pulse 100; not very feeble. Enema of mist. assafoet.

6 P. M. During day, the convulsions have continued; mouth opened with difficulty; wine and liquids introduced by prying it open with a spoon. At times delirious, but for most part mind clear. Bowels moved by the enema. This evening, beef-tea and wine, and, if restless at night, tinct. opii gtt. xxx.

6th. No sleep; convulsions almost incessant; respiration during the paroxysms less difficult; deglutition impossible.

7th. As before.

8 P. M. Morphiae sulph. gr. one-quarter at night.

8th. Muscles of the face drawn to the *left* (this may not have been recorded before). At first, they were drawn to the *right*. After the morphia, slept; convulsions recurring as before.

4 P. M. Has been very drowsy all day; roused only to take nourishment. Enema of soap and oil.

9th. In the night, very restless, but the drowsiness continued. Had only one dose of morphine in the night. Bowels moved by enema. Not able to move the head (this has been the case for three or four days); takes less

notice. Until to-day, has asked eagerly for her drinks, &c.; now drowsy, comatose. Skin having a livid cast, but warm; pulse 160; feeble.

6 P. M. Pulse 200; respiration almost entirely abdominal. Eyes for most part directed steadily to the right, but are occasionally turned to the left. Has had no voluntary motion of head for a week past; it lies just as it is placed; swallows with great difficulty. At night, morphia gr. $\frac{1}{2}$ d, if restless.

10th. Same, excepting less convulsion.

11th. During night, some sleep, soon after opiate; no convulsions; some pain in abdomen and side; now pulse 136; mind perfectly clear; articulation more distinct. Asks for a little rye pudding, and for brandy and water; may have it.

6 P. M. No convulsions to-day; much thirst. No sleep until within the last fifteen minutes.

12th. Has had some sleep, immediately after an opiate; no convulsions. Says she "feels sick," *i. e.* sensation of great weakness; mind perfectly clear. Pulse 136; feeble; articulation more distinct. While speaking, the mouth is drawn towards the right side; complains of pain in left iliac region. No dejection since 10th; sinapism; has had three enemata administered since morning. If no dejection in an hour, infus. sen. comp. \mathfrak{z} iv. Has appetite; asks for bread, brandy and water occasionally p. r. n.

6 P. M. At noon, nausea and vomiting; vomiting has continued; at first, the fluid vomited was green, afterwards dark coloured; complains of pain in left side; abdomen tender on pressure; no dejection. Pulse 148; feeble; respiration irregular, *i. e.* abrupt; short expiration; fomentations to abdomen.

13th. No vomiting since yesterday at 6 P. M.; is more inclined to delirium. Face flushed; skin at this moment warm; lower extremities have been cold during the night; mind clear, but speaks with much less animation; eyes shut for most part; wants to be fanned; abdomen less tender; pain in left side.

14th. Died at 7 this A. M. Autopsy not allowed.

III. Elizabeth Sumner, æt. 32; entered January 22d, 1847. Health for past year not good; has had affection of chest, probably chronic bronchitis; second gestation; the first time an abortion.

Jan. 25th. 11 P. M. Labour commenced.

26th. 11½ A. M. Child born; male. Weight 6½ pounds.

29th. Doing well, with exception of cough, which is very troublesome; complains of soreness in abdomen on coughing; no tenderness on pressure. Pulse 100. At night, pil. scillæ, to be followed by \mathfrak{z} j of ol. ric. in morning.

30th. Two dejections; pain in abdomen continues; increased by motion; tender on pressure in right iliac fossa; skin hot; pulse 112, full; bran poultice to abdomen.

31st. Pain and soreness less; skin moist, less hot; pulse 88.

Feb. 2d. Restless and excited last night; insisted on getting out of bed; now rational; complains of occasional darting pain in right iliac region. Emplasp. cantharid.

5th. Nights very uneasy; delirious at times. Opii gr. iii at bed-time.

6th. Had the opiate and fluid extract of valerian, without sleep; now, pulse 96; countenance flushed; talks incoherently; every four hours take ipecac. gr. iv until specific effect.

7 P. M. Has taken the ipecac. without vomiting or purging; somewhat more quiet; pulse 96, soft; countenance not flushed; yesterday there was considerable spasmodic action of limbs and body; motion of arm rigid; to-day it is less; continue ipecac.

7th. 9 A. M. No sleep in night; at times, violent delirium; now, skin moist; pulse 96; countenance flushed; spasmodic action of limbs; tongue coated; makes no complaint.

2 P. M. Has had a decided convulsion, lasting fifteen minutes; now, sweating; tongue moist; less coated; no dejection; no vomiting.

8 P. M. Countenance more natural; no more convulsions; pulse 80; mind more clear; says she feels better; asks for gruel.

8th. 8 A. M. Restless night; two dejections; now expression maniacal; constant muttering; difficultly comprehends; skin moist, hot; pulse 112; has taken cocoa and gruel, takes no notice of an infant brought to her, (her own having been sent away to be nursed;) limbs in almost constant motion.

8 P. M. Pulse 130, as before; take at night pill of camphor grs. ij, and morphine gr. $\frac{1}{4}$, p. r. n. Frequent convulsions; countenance pale and haggard; unable to articulate, although at times appears to comprehend questions.

9th. Difficult to induce her to swallow pills, but she took one yesterday forenoon. At times, violent delirium, but rather less than yesterday. Had yesterday two involuntary dejections. Now, pulse 88; eyes injected; skin warm; tongue moist, coated; countenance sunken; delirious; continue ipecac. to-day. At night, pills of camphor and opium.

10th. Very little sleep in night; refused to swallow pill; but on the whole night somewhat more quiet than the last. During the forenoon, took ipecac., after which vomited; one small dejection. Now, occasionally rational; able to articulate; asks for gruel, takes it with relish; pays but little attention to what is about her; talks incoherently. Frequently sobbing. On the other hand, her countenance is more natural; temperature of skin more natural; pulse 80; a slight secretion of milk; and the return of lochia, which had nearly ceased. Pill at night, if restless.

12th. Had one pill in night; restless, but less so than the previous night; now, dozing; skin natural; pulse 80; countenance uneasy; not readily aroused; takes nourishment with appetite.

23d. Has been gradually but steadily improving; sits up nearly all day; walks about chamber.

28th. Discharged convalescent.

Although only the first of these cases may be considered an instance of true puerperal convulsions, yet, as the others were cases of convulsions, occurring during an unnaturally excited condition of the nervous system following parturition, I have not hesitated to introduce them.

22. *Child.*—With respect to the children, I find but little worthy of notice.

One case of *cephalæmatoma* occurred. The mother, aged 29 years, her fifth pregnancy. She was ten hours and a half in labour, and her child, a male, weighed eight pounds. The tumour was upon the right parietal bone. The mother left the hospital a fortnight after her confinement, and nothing is known of her child since.

In one case, death followed *hemorrhage from the cord*. The child, a female, weighing seven pounds and a half, was born after a labour of thirty-six hours. "During the afternoon, blood began to ooze from the extremity of the cord. It was tied again and again without effect."

On the next morning, "the right eye was livid and œdematous. Trunk and limbs œdematous, but not discoloured; also various parts, chiefly on limbs. The cellular tissue is almost of a stony hardness. The colour of the skin not altered."

On the second day, "the cord has pulsated up to this time. Blood has continued to ooze from the *extremity* until to-day; it now flows from the root; the cord beginning to be detached. On the third day, the child died."

The only notices of *distortions* I can find are two instances in which "the right foot was turned inwards varus."

To show that it is not an uncommon circumstance for a woman to be mistaken as to her pregnancy, I would state that, during the four years I was connected with this institution, three women of excellent character entered to be confined, neither of whom was pregnant. One of them, a very industrious Irishwoman, from the fact of her menses being suppressed, and her abdomen having become enlarged, and from the belief that she distinguished "quickening," made her usual calculations, expended all the means she could spare from her hard earnings to provide clothing for her expected offspring, and with her "permit" came to the hospital. I was called to attend her in her accouchement. She was in bed, expecting momentarily to be confined. Her pains were *false pains*—she was not pregnant.

Upon another occasion, I was called at night to attend two women who were expecting to be sick. One was in labour; the other, an American, had entered the house a few hours previously, and thought she should probably be confined during the night. While the labour of the one was rapidly advancing, observing that the other was silent, I jocosely asked her what reasons she had for supposing she should be confined. She answered, "Because her doctor had told her she should be." I asked her if that were her only reason. She said it was a principal one; that her catamenia had been irregular, her abdomen had enlarged; that she had suffered much pain in the region of the uterus; and that her physician, satisfied of her pregnancy, had fixed upon the day of her delivery. I examined her, and found the uterus empty. She was suffering from a congestion of its neck, and was dismissed, to enter the Massachusetts General Hospital for treatment.

ART. VI.—*Description of a Vectis for the Removal of the Globular Pessary.*
By HENRY BOND, M. D.

A FEW years ago, I was called to a lady aged nearly seventy years, who had been affected for a considerable time with complete prolapsus uteri; and of course the sphincter vaginæ had become much relaxed and dilated. She had employed a perineal bandage, and likewise a supporter, which acted only as

imperfect palliatives. The more special occasion of my being called at the time was a disagreeable vaginal discharge, and pain and tenderness in the uterus. Upon examination, I found an ulcer on one side of the cervix and os uteri, and there was tenderness in the whole organ, as far as it could be examined.

Before using a pessary, or any other efficient means, to retain the uterus in its proper position, it was necessary to use remedies to remove the morbid condition of the parts, which, after a little time, was accomplished. After this, I first tried a disk pessary. But this would almost immediately become displaced; and, although of such a size as to require some force to introduce it, in stooping, straining, or any ordinary effort, such as getting into a high bed, it would sometimes be thrust out. I next employed a silver-gilt globular pessary. This also would escape, unless retained by a bandage and compress, which therefore were employed until the sphincter should have time to recover its tone. After a very few weeks, it became unnecessary to use the bandage and compress, and the pessary gave her great relief.

After the lapse of more than a year, during which time the pessary had not been removed, she became affected with a vaginal discharge, and disagreeable sensations, if not absolute pain, in the uterine region. I recommended the removal of the pessary, in order to ascertain the condition of the parts. This the patient chose to have postponed. At the end of a year and a half or more, the symptoms not having abated, but rather grown worse, she consented to its removal. I found the pessary situated so high that I could scarcely reach it with my finger, and there was a firm stricture of the vagina below it. The difficulty of reaching it was partly owing to the very full habit and the corpulency of the patient. If such a case had ever happened, or were possible, I should have said that here the pessary had got into the uterus. The form of the patient and the position of the pessary rendered it impossible to act on it in the rectum; and, moreover, if it could have been reached by this avenue, it is very improbable that it could have been forced through the stricture by this process.

I then went to surgical instrument-makers to ascertain if they had anything that would serve my purpose in such an emergency. I found none that would meet the indication, except by crushing or destroying the pessary. I then directed a vectis to be made* such as is here delineated.



I applied it without difficulty, and found that I had a very satisfactory hold or control of the pessary; but the stricture was so firm that it was difficult

* Manufactured by Messrs. John Rorer and Sons.

to accomplish the delivery. With one hand I used traction, so as to make the pessary press upon and distend the stricture (which resembled exactly the rigid os uteri, when it is partly dilated in parturition), and then used a finger of the other hand to dilate the stricture. After little delay, I succeeded in bringing it through. After omitting the use of the pessary for a little time, the prolapsus returned, the instrument was introduced again, and the patient still wears it. At present, either the stricture has disappeared, or the pessary lies below it.

The wood-cut probably sufficiently explains itself. The clam is accurately modelled to a globular pessary of the size of a billiard ball; but it will be equally efficient, when pessaries are of other dimensions. Perhaps it may be a fault in the specimen from which the drawing was made, that the clam constitutes too large a segment of a circle, thereby lessening, in some cases, the facility of its application. It might be made to constitute a less portion of a circle, and yet be entirely efficient. When the clam is applied, a finger, acting as an antagonist, may be applied to the pessary to prevent it slipping off.

Should such a case as the foregoing occur to any reader of this page, I would commend to him a trial of this simple little instrument. It may obviate the necessity of a bistoury to relieve the stricture; and, in other cases, it may render unnecessary that process, alike disgusting to the patient and the operator, of acting on the pessary through the rectum.

April 20, 1850.

[We have employed the vectis of Dr. Bond in one case, and with the most satisfactory result. About a year ago, we were sent for by a lady who was suffering great uneasiness from a globular, wooden pessary, which had been introduced a few days previously by a surgeon in Boston. Finding every effort to remove the pessary by the usual manœuvres ineffectual, we obtained one of Dr. Bond's vectis, by the aid of which we extracted the pessary without any difficulty.—EDITOR.]

ART. VII.—*Cyanosis, produced by Transposition of the Orifices of the Aorta and Pulmonary Artery.* Reported by CARTER P. JOHNSON, M. D., Prof. Anat. and Physiol. Med. Dep. Hampden Sidney College, Richmond, Va. (With two figures.)

ON the 17th of May, I was requested by Dr. G. G. Miner, of this city, to aid him in making a post-mortem examination of a male mulatto infant, aged precisely two months, which had suffered since its birth from some disorder of the circulation and symptoms of cyanosis, and which had died the previous evening. I learned from the Doctor that the cyanosis was *permanent*, being

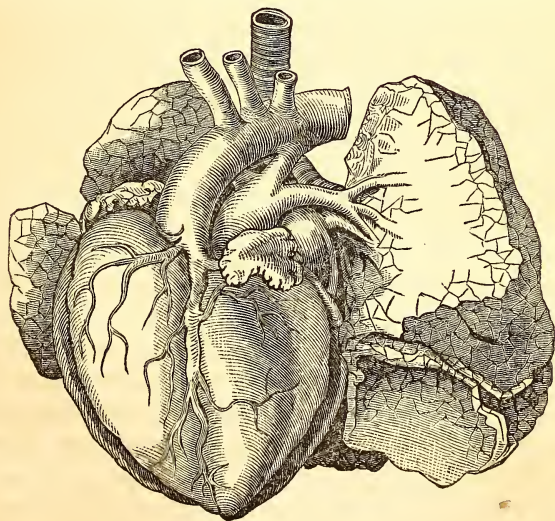
always present to a greater or less extent, though considerably increased by any unusual exertion on the part of the child.

On proceeding to the autopsy, the body presented externally nothing worthy of special notice. Though rather under size, it appeared to have been tolerably well nourished, and to differ but little in plumpness and rotundity from the bodies of other children of the same age.

Upon opening the thorax, the cavity of each pleura was found to contain from two to three ounces of serum; the surfaces of the pleura were healthy. The lungs were but imperfectly inflated, though sufficiently so to float upon water. Instead of presenting the very white colour of the child, they presented, except in a few spots where a larger amount of air had obtained access, the dark purple colour of a highly congested or apoplectic lung.

The pericardium was healthy, containing no more fluid than usual. The heart presented the usual form, size, and direction; but, upon examining the upper portion from which the aorta and pulmonary artery emerge, an unusual relation of their vessels was observed. Instead of finding the pulmonary artery lying in front of and concealing the orifice to the aorta, the two vessels lay side by side from their origin to the division of the pulmonary artery, the aorta lying on the *right* and somewhat in front, the pulmonary artery on the *left*, a little behind. (See Figure 1.)

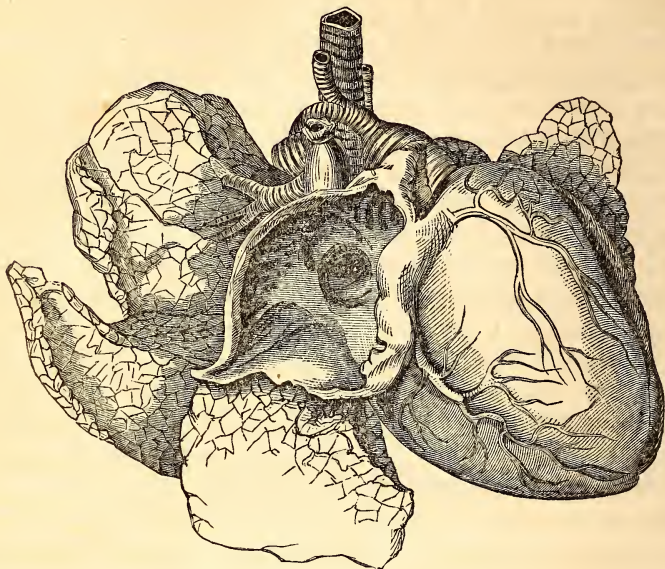
Fig. 1.



On examining the interior of the cavities, beginning with the right auricle, the vena cavæ and coronariæ were found empty as usual. The *foramen ovale* was *patulous* by an orifice oval in shape, the vertical diameter of which measured about four and a half lines, the transverse diameter about two and

a half lines (see Fig. 2). The *musculi pectinati* were developed to a much greater extent than usual, large fleshy pillars, resembling the *columnæ carneæ*

Fig. 2.



of the ventricles, passing down from the upper to the posterior wall. The right auriculo-ventricular orifice was natural, the valves presenting the usual tricuspid arrangement. The walls of the right ventricle were very nearly as thick as those of the left. The *columnæ carneæ* were larger and more fully developed than those of the left side, though the latter presented a much more red appearance. From the upper and anterior portion of the cavity of the *right* ventricle the *aorta* took its origin, provided, as usual, with its three semilunar valves. With the exception of its orifice, and the consequent change produced in the first portion of its course, the distribution of the *aorta* was normal.

The left auricle received, as usual, the pulmonary veins, and in its interior presented on the septum the opening of the foramen ovale. In other respects, its anatomy was normal. The left auriculo-ventricular orifice presented the usual mitral valve. The left ventricle presented no peculiarity in its structure; the septum ventriculorum was complete. From the upper and posterior portion of the cavity of the left ventricle, just behind the posterior fold of the valve, the *pulmonary artery* took its origin by a *free* and *patulous* orifice. From its origin it proceeded upwards and to the right for about an inch, when it divided into three branches, the right and left having the usual course and distribution of the pulmonary arteries, the middle branch (the previous ductus arteriosus) piercing the concavity of the arch of the *aorta*. The pulmonary branches were pervious, and not materially smaller than usual.

Remarks.—From such an arrangement of the heart and blood-vessels, it is easy to explain the symptoms of imperfect arterialization of the blood which this case presented. The right ventricle received, as usual, only venous blood, and propelled this blood unchanged into the aorta, and thence through the whole systemic circulation. But, had the various organs of the body received their supply of blood only through this source, they would have ceased to perform their functions after a few revolutions of the current of the circulation, and life would have become extinct within a few minutes after birth. A source of arterialized blood, however, was afforded through the *ductus arteriosus*, which received the blood from the left ventricle through the pulmonary artery. As in the foetus, therefore, the venous organs of the body must have been supplied with mixed arterial and venous blood.

The pulmonary artery communicating with the left ventricle which received the blood from the left auricle, which in its turn received arterial blood from the pulmonary veins, how was the venous blood of the *right* side carried into the lungs, and how was hæmotosis accomplished at all? This could only have been effected by the passage of a portion of the venous blood in the right auricle, through the open foramen ovale, into the left auricle, from whence, passing into the left ventricle, it would be propelled by the latter, in common with the arterial blood, into the pulmonary artery; a portion of this mixed blood finding its way through the divisions of the pulmonary artery into the lungs, the other portion passing through the ductus arteriosus into the aorta. Would not this fact militate against the doctrine advocated of late years, that, after birth and the full establishment of the true circulation, no current would pass through the foramen ovale even were it open?

In referring to the various works on anatomy, within my reach at present, among them Quain's magnificent work on the Arteries, and the article on the Heart, *Cyclop. Anat. and Physiol.*, I find no reference to any case similar to this, except in Meckel, who, in vol. ii. p. 220, refers to transposition of the great vessel as one of the anomalies that may occur, and, in support of his assertion, refers in a note to one case reported by Tiedemann in the *Zeitschrift für Physiologie*. Mr. Gintrac, in his "*Observations et Recherches sur le Cyanose*," has collected four similar cases, and Dr. Moreton Stillé, in his able article on Cyanosis (*American Journal of the Medical Sciences*, July, 1844), apparently on the authenticity of Gintrac, lays down transposition of the aorta and pulmonary artery as one of the "lesions, alterations, or defects" causing cyanosis. Not having access to Gintrac's work, I am unable to say whether his cases correspond in other respects with this.

In conclusion, I would remark that the history of this case would seem to confirm Dr. Stillé's general conclusion that "no *one* lesion is entitled to be considered as the anatomical character of cyanosis; but that it depends simply upon any cause which, acting at the centre of the circulation, will produce a stasis of venous blood in the capillary system." In this case, that stasis was produced, not by any obstruction or contraction of the pulmonary

arteries, but by the difficulty presented to the accomplishment of hæmatisation in consequence of the small amount of venous blood which could find its way to the lungs. The right auriculo-ventricular orifice, and the opening of the aorta into the right ventricle, being both free, and opening in the direct current of the circulation, only a small portion of the blood in the right side of the heart would pass through the comparatively small foramen ovale, and of that only about two-thirds would pass to the lungs; the remaining third passing through the ductus arteriosus into the aorta.

ART. VIII.—*False Encephaloid. Fatty Tumour of the Liver, feigning Encephaloid—Perforation of the Diaphragm—Growth in Cavity of the Chest, and Expectorations therefrom.* By R. S. HOLMES, M. D., Professor of Physiology, St. Louis Medical College.

THE following very interesting case occurred within the last few weeks in the practice of Drs. Chase and Johnson (George) of this city.

S. T., a very healthy man, of temperate habits, a native of Ireland, of a strong, though thin frame of body, inclined to a sanguine temperament, aged thirty-eight years, complained, some six months since (the first time he had ever been sick), of chills or rigors, which he called the "dumb ague." They did not give him much uneasiness, however, and he soon recovered. About six weeks ago, he experienced considerable pain about the lower part of the right lung. This was supposed to be a pleuritic inflammation; and, although no certain diagnosis could be arrived at, he was treated accordingly. The symptoms were not alleviated, however. There was considerable pain; a dry cough, for the first time, without any expectoration; loss of appetite; rapid emaciation of body; frequency of pulse. No disease of the lung by auscultation or percussion could be found, save that, in the right hypochondriac region, for the space of some two or three inches in diameter, a dull, heavy sound was elicited, and no pectoral murmur was heard on auscultation.

During the second week, the patient expectorated, in a severe paroxysm of coughing, a mass of substance about one inch wide, two and a half inches long, and half an inch thick, of the shape of an almond. The smallest end of this was smooth and rounded, as if formed in a mould; the other rough, as though broken from a larger mass. It was of a whitish colour, but had a distinct yellow tint; a thin membrane encysting it apparently, save at the end, where it seemed as if torn from its connections. The mass excited a good deal of curiosity from its striking resemblance, in consistence and appearance, to encephaloid; as also from its size, as it was almost impossible to believe that it could be expelled, as a mass, from the lungs by the trachea.

Under the microscope, a small portion of this tumour, being slightly pressed between two glasses, exhibited the appearance of innumerable globules, many smaller than the lymph cells, and others so large as to occupy nearly the entire field, in a Ross one-eighth inch lens. I have never seen oil globules so beautifully displayed; in fact, I never before saw them, in any secretion of the body, exhibiting such tenuity or oleic properties. The form being spherical in all instances, pressure altered this form in some of the larger globules; but the spherical form was still most apparent, as if the disk had been more flattened without losing its original shape. The tumour was so delicate that a section sufficiently thin without pressure, to be viewed by transmitted light, could not be obtained. No vessels could be observed in it. It was perfectly homogeneous through its whole texture, being made up chiefly of these globules, small amorphous masses, apparently of sebaceous matter; shreds of hyalitic membrane, scattered here and there through the field, and a few fibrinous shreds, apparently, were seen.

Treated with acetic acid, the globules were almost wholly dispersed, a few only of the smaller ones remaining here and there after the lapse of half an hour. They seemed to have coalesced or run into each other, forming apparently large, shapeless drops of oil; the amorphous mass was rendered more transparent; and, scattered about the fields, were particles of membrane forming the debris, as it were, of former cells. In twenty-four hours, the mass was reduced to the consistence and appearance of lard; and, when spread thin on the glass or pressed between two glasses, showed large, shapeless, oily-like globules.

With ether, the like coalescing effects took place, though not to anything like the same extent, the whole field being rendered more opaque. A mass placed in ether, and which has now remained in it for three or four weeks, has not discoloured it; nor can I find any of the globules floating in it. The mass is rendered firmer, more opaque, and whiter, and does not exhibit such a tendency to be spread about in globules.

In alcohol, the globules were mostly broken, none of the larger ones being apparent. In the course of a few hours, the alcohol was made quite turbid. A slight film that was floating on the surface, on being placed under the field of the microscope, proved to be made up of many globules of the diameter of the blood-disk.

During the third week, five other masses, one larger than that which has been described, were expectorated from the lung. On examining these, they proved to have precisely the same character as the first. The diagnosis made then was this: A fatty tumour originating in the liver; perforation of the diaphragm; displacement of the lung by the tumour; cavity of considerable size at the base of right lung. It will be seen how far this diagnosis was verified. The patient complained of no pain, only of loss of strength, of appetite, of the annoying cough, with expectoration of bloody mucus and pus, with membranous shreds. In the fourth and fifth week, hectic fever of a serious

grade occurred. The expectoration as before, and of small masses of this matter, was constant. Sometimes, a tablespoonful of broken matter would be thrown up at one time. This state of things continued until the time of his death, in the sixth week.

Autopsy, sixteen hours after death.—On the first exposure of the liver, its appearance was perfectly healthy externally, and an incision being made into it, no sign of disease could be discovered. On turning out its diaphragmatic portion, however, extensive disease was apparent. For an extent of about four by six inches, there was a positive loss of substance to the depth of two to eight lines. The walls of this diseased part were covered with pus, and nearly in its centre was a depression some two inches in breadth by one in length, as if it had been the bed of some morbid growth. The depth of this depression was about an inch. Like the diseased remaining portions, its surface was covered with pus. The pus resembled so much what the tumour *might* have been, had it been softened, that I examined it under the glass and found nothing but the pus cell. A line or two beyond this, going into the substance of the liver, it again resumed its characteristic healthy appearance. In fact, all the other parts of it might be taken as a type of the healthy liver. The depressions were all caused by loss of substance, the pus on the diseased portion being evidently secreted *in situ* from that portion. But little pus was seen in the abdominal cavity, probably not a tablespoonful altogether.

The diaphragm was perforated by ulceration, the opening being two and a half inches by one inch in extent; the thickened walls of the diaphragm protruding inwardly, in a very evident manner, from the liver toward the lung.

The cavity occupied by the tumour in the thorax was of great extent. There was a positive loss of probably one-third of the right lung. It resembled precisely the cavity of an abscess. The ragged walls of the lung, dripping with pus, protruded into it. There were two or three ounces of pus within the cavity, and pus and bile were found throughout the lung; otherwise, it was perfectly healthy. A small section that I cut from the upper lobe of the lung was infiltrated with pus and bile. The space occupied by the tumour in the thorax must have been of the extent of six to seven by four or five inches. The left lung was perfectly healthy.

The intestines, stomach, spleen, and heart presented a healthy appearance.

This mass of fatty matter, without the aid of the microscope, would have been pronounced encephaloid, or of a tuberculous character. It was, I think, of the exact kind called by Vogel *false encephaloid*.

"I once observed," says he, "a tumour of this nature in a lung. It was of the size of a walnut, of a reddish-white tint, about as soft as brain, and was declared to be encephaloid by all the physicians present. When examined under the microscope, it was found to be merely a deposition of oil-globules (fat) in the normal tissue of the lung." (*Path. Anat.*, p. 293.)

Facing page 503 of Vogel's work is a cut, No. 10, described in the text as "a tumour, supposed to be encephaloid, from the lung of an officer who had often suffered from gonorrhœa. The lung contained a circumscribed tumour of the size of a walnut, and of a reddish-white colour. It was quite soft, could easily be reduced to a pulp, and resembled cerebral substance. From these physical characters, it was pronounced to be encephaloid of the lung." We are at a loss here to determine whether he makes reference to the same tumour in both instances; the cut that is given could not be distinguished from a drawing I made by the camera lucida of the tumour I have described, or rather of its globules; for the cut in Vogel I suppose merely represents oil globules.

The diagnosis of the tumour originating in the liver (as we suppose from the autopsy it was evident it did) was founded on the tendency of the liver beyond almost any other structure to secrete oil globules.

The tumour, I suppose, had its origin on the diaphragmatic portion of the liver; a distinct growth, independent of the liver, save that it received its impulse and nutriment therefrom. By pressure on the liver, it took on an ulcerative inflammation, with absorption. The like pressure on the diaphragm caused it also to be destroyed in like manner; but when the tumour gained an entrance into the thorax, the pressure that must have heretofore confined it to a considerable degree, being removed, its growth was rapid, with a speedy destruction of the lung; no expectoration of the tumour taking place until it had gained the larger bronchi.

ART. IX.—*Case of Cynanche Parotidæa, with Metastasis to the Testicle, and Cerebral Complication. Convalescence in ten days.* By FRANCIS MINOT, M. D. (Read before the Boston Society for Medical Observation, Jan. 21st, 1850.)

MR. A., a gentleman aged about fifty, tall, thin, with dark complexion, hair and eyes, of strongly marked nervous temperament, habitually dyspeptic and low-spirited, frequently complaining of pain in the head, was more unwell than usual on the 9th of August, 1849, and, on the evening of the 10th, had swelling under the angle of the lower jaw on each side, with pain on motion of the jaw, and in swallowing. He was living at the time a few miles from the city, at a place where an epidemic of mumps was prevalent. The pain was quite severe, but the swelling moderate. He took no remedies, but kept in-doors until the 13th, when he came to town to attend to some important business, although it was raining, and the weather was damp and chilly. He was well wrapped up, and did not fatigue himself.

The same evening he called upon me to say that the swelling in the jaws had abated, and that he began to feel occasionally slight pain in the testicles. He was habitually costive, but the bowels had been freely opened by medicine. He was advised to take some mild laxative medicine, to go to bed, and to apply fomentations to the jaws, with support to the testicles.

The next morning (Aug. 14th), the pain in the testicles had diminished, and that in the jaw was increased. He had had an uncomfortable night, and was very irritable and restless, complaining much of pain in the top of his head. The tongue was covered with a thin yellowish coat, and there had been no dejection. He repeated the medicine of the previous evening, but without effect; and towards night the pain in the head had increased considerably, and he had had alternations of chills and heat through the day. He was very restless and irritable, and the skin was very sensitive to the least touch. There was but little pain in the testicles. The pulse was 100, and quite full. There was considerable thirst, and no appetite. He was ordered four ounces of an infusion of senna and manna.

At 10 P. M., he had had no dejection, but passed much wind, which gave him great relief. He refused to take an enema. He had slept most of the time since six o'clock, and said he felt better, and that he had no pain in the testicles, except while standing up. Pulse 84; urine free.

Aug. 15th. He had slept heavily almost all night. At 3 A. M., he got another dose of senna and manna, which operated once. His condition was as follows: Drowsy; answers intelligently, but slowly, and sometimes a little incoherently; face flushed; skin hot and dry; tongue covered with a thin, moist, whitish coat; thirst moderate; bad taste in mouth; pulse 88, full, somewhat hard; urine free; no pain or swelling in angles of jaw; right testicle somewhat swollen, hard, and tender; left testicle natural. He refused to have leeches applied to the head. Thirty drops of Hoffmann's anodyne were ordered every hour and a half.

At 6 P. M., he was more drowsy and stupid; took no interest in what was going on, had some stertor, had slept heavily all day, and had had one free dejection since morning. In other respects, he was the same as at the last visit.

Dr. J. Bigelow was called in consultation. The patient's feet were placed in warm water, sinapisms were applied to the feet and legs, fomentations to the abdomen and scrotum, and an evaporating lotion to the head. Ten grains each of calomel and compound extract of colocynth were administered.

Soon after this, he suddenly began to talk rapidly, and incoherently; became unreasonable, resisting the attentions of his attendants, and frequently expectorating small quantities of frothy saliva.

At 11 P. M., his condition remaining the same, about twelve ounces of blood were taken from the arm, the operation being performed with great difficulty, on account of the opposition of the patient. This was followed by no apparent change in the pulse or general symptoms. In the course of the

night, he had a free dejection, getting up to the water-closet, and returning to bed without assistance.

16th. During the night, he had no sleep, but continued talking incessantly. There were no spasms or convulsions. Dr. Bigelow being out of town, Dr. J. Ware saw the patient in consultation. His condition was very much the same. He was talking incessantly and incoherently, frequently expectorating small quantities of frothy saliva; very irritable, answering tolerably well to questions, but wandering again immediately; the pupils were natural, the eyes generally closed; the hands were constantly applied, one to the head, the other to the scrotum, supporting the testicles; the right testicle was enlarged to about double the size of the other, hard and tender; the patient said it was not painful; the left testicle was natural; no pain or swelling in angles of jaw; skin hot, and dry; face flushed; eye dull; tongue and mouth as on the 15th; much thirst; pulse 92, full, not hard. Twenty leeches were applied to the temples, notwithstanding much opposition on the part of the patient; croton oil was applied to the head, and he took a little gruel, and a cup of tea.

In the afternoon, Drs. Bigelow and Ware saw the patient in consultation. A scruple of calomel was given, and leeches were ordered to the scrotum, but the opposition of the patient was such that it was impossible to apply them.

Towards evening, he grew more quiet, and the delirium abated. He sat up a few minutes, and said it gave great relief to his head. Afterwards, he lay quiet, occasionally dropping asleep, without stertor. Towards morning, he slept for an hour quietly. During the night, he rose several times, and went to the water-closet without assistance. His mind wandered occasionally, but he had no active delirium.

17th. Drs. Bigelow, Ware, and Walker saw the patient. The general condition was much improved. Pulse 84, soft; skin cool, and less dry; tongue cleaner on edges; he asked for gruel. The pain in the head was better; the mind pretty clear, though weak; he burst into tears on seeing his friends. The testicle was somewhat less swollen, though still very tender. The scrotum was somewhat cedematous. The teeth were slightly tender, and there was a bad taste in the mouth.

During the day, he sat up twice. In the evening, the pulse was 76, and quite soft. The urine was free, but high-coloured and offensive. He was very quiet and rational. The eyes were painful, probably from the effect of the croton oil conveyed to them from the hair by the fingers.

From this time, Mr. A. steadily improved, and by the 20th was convalescent. The pain and swelling in the testicle gradually disappeared. The pain in the head remained for a long time, and for several days he continued so sensitive to noise that whereas before his illness he was slightly deaf, he could now hear the lowest voice with ease.

Although cerebral complication in cases of mumps is spoken of by all

writers as generally fatal, the writer has been able to find but one recorded case in the books. Eberle (*Treatise on the Practice of Medicine*, vol. ii. p. 333) says, "I have known a case of this kind terminate fatally in less than an hour, under a paroxysm of violent convulsions." Perhaps the danger of the affection has been overrated. We may suppose that the sympathetic irritation caused by the metastasis of a specific and limited inflammation would be likely to cease when the latter had come to its natural termination; and, in fact, in this case the delirium ceased on the sixth day after the first appearance of the swelling of the parotid glands, being about the time when those glands would have subsided into their natural state, in the usual course of things. But observations are wanting on this point.

By a majority of writers, metastasis to the testicle in mumps is regarded as a favourable circumstance, as serving to divert the disease from the brain; yet, in this instance, the swelling of the testicle preceded the cerebral symptoms by about thirty-six or forty hours! and Watson (*Lectures on the Principles and Practice of Physic*, vol. i. p. 775) remarks, "Inflammation of the brain or its membranes has sometimes occurred on the disappearance of the parotid swelling; but it has much oftener supervened, I believe, upon the retrocession of the inflammation of the testicle or mamma." But in this case there was no retrocession; the testicle continued swollen and tender during the head symptoms, and for some time after.

ART. X.—*Contributions to Practical Medicine*. By JOHN P. METTAUER, M. D., LL. D., Professor of the Principles and Practice of Medicine and Surgery in the Medical Department of Randolph Macon College, Virginia.

I. *Constipation*.—In slight degrees, constipation is hardly to be regarded as a disease; and, with some individuals, it does not seem to impair the health even when of prolonged continuance. Most commonly, however, the health suffers impairment, in greater or less degrees, from its commencement; and it is always an annoying state, more especially with persons of regular habits, who place the proper value upon daily evacuations from the bowels, as an important means of preserving health. With students, or other persons of sedentary habits, it is almost invariably both annoying and health-disordering. Few laborious and indefatigable students escape it. Generally, it calls for correction, as, if long continued, it will often superinduce disease of grave characters. It is by no means uncommon to find constipation induced by want of corporeal exercise, or a neglect to evacuate the bowels at the customary hour, resulting in disordered digestion, and finally in dyspepsia, with its train of real and imaginary ills.

Constipation of the simple form, in its early stage, depends more on the disturbance or change of the habit of evacuating the bowels at a particular period or hour of the day than on a morbid condition of the intestinal canal. In that respect, it resembles disturbance or change of the habit of sleeping at a particular hour or period of the night or day; and such disturbance is not unfrequently caused by unexpected business, or any other occurrence of importance, at the accustomed time of evacuating the bowels, or of sleeping. With students, it is often caused by profound application of the mind in study at such time, which either prevents the dejecting desire, or renders the individual unconscious of it. In some instances, too, it is induced by sheer indolence, or reluctance for the least motion of the body, or on account of bad weather, or the difficulty of procuring a convenient place for privately evacuating the bowels. Many individuals become constipated from the latter cause, upon going to a city. After the habit of daily alvine evacuations is broken up, and constipation follows, the ingesta, from being detained too long in the intestinal cavity, become, in most cases, unduly hardened by the absorption of their thinner parts, or they run into chemical transmutations, distinguished by acid eructations, heartburn, flatulence, colic in many instances, diarrhoea, and, not unusually, with headache and fever.

When diarrhoea occurs, after one or two days' continuance, it often ceases, and is followed by constipation. In this manner, these conditions continue to alternate until the constipation is corrected. Cases often occur, however, in which the most obstinate constipation obtains, without causing the slightest appreciable disturbance of the general health, with the exception, perhaps, of headache, or undue fulness, or flushing of the face; and these are only occasionally met with.

In the present state of our knowledge, it is not ascertained that any particular portion of the intestinal canal is more deeply implicated than the rest in this form of constipation. The whole gastro-intestinal cavity seems equally affected with torpor, and free from the signs of structural disease. Torpor, superinduced by broken habits, in which the peristaltic action suffers first, seems to be the condition upon which constipation chiefly depends in its commencement; but other functions of the cavity are ultimately implicated, and, finally, those of other and even distant organs suffer also in turn.

The *treatment* of constipation, in its early stage, which I have found most successful, is the daily use of a mild cathartic enema, administered a short time after breakfast. If regularly employed at a particular hour, and in sufficient quantity to distend the rectum, and even the sigmoid flexure of the colon, decidedly, it seldom fails to procure an evacuation. If it does not, a second, or even a third or fourth may be employed after intervals of twenty or thirty minutes; taking care always to place the patient on the left side when the enema is administered, and that not less than a pint be well introduced at a time. I have always preferred to employ bulky injections in these cases, and have often caused three and four pints to be thrown up at a time,

with the view of fully distending the rectum and sigmoid flexure of the colon, as well as to soften the indurated feculent mass contained by these organs. This plan should be continued until a habit is formed; after which, the bulk, as well as the irritant strength, of the injection may be very gradually reduced, until, finally, the remedy can be laid aside. In some cases, it will be found necessary, occasionally, to have recourse again to the enema, especially if a disposition is manifested to postpone the defecating period. This may be rendered needless, however, in some degree, by punctually visiting the necessary at the same hour, and, as far as possible, by abstracting the mind from all other subjects for the time being.

The *kind* of food will, in many instances, essentially co-operate with enemata in regulating the bowels. Generally, individuals will find soft, pultaceous nourishment best suited to their situations. The different kinds of mush, soaked bread, &c., will greatly promote a soluble state of the bowels, as well as digestion. Rye mush especially, as well as cracked boiled wheat, decidedly tends to an easy state of defecation, and solubility of the bowels. Individuals disposed to constipation, or labouring under it, should only use animal food sparingly, as its tendency is to increase that state. Nor will it be proper for them to take food oftener than once in five or six hours. By no means will it be proper that inter-meals, termed "snacks," or "luncheons," be indulged in, as they not only increase or perpetuate the constipating tendency, but decidedly impair digestion. The stomach and duodenum should invariably unload themselves of a previous meal before another is taken in. Even a cracker, or any other article of food in the smallest quantity, if taken into the stomach before a regular meal, will impair the appetite more or less for such meal; and food taken in under such circumstances must be imperfectly digested, and its tendency would be to superinduce irregularity of some kind in the gastro-intestinal cavity: if constipation exists, that state would be increased; and if the opposite condition be present, aggravation of it could hardly fail to follow.

As an auxiliary means of correcting constipation, regular exercise will be required daily in the open air. Attentions to dress also are important. The person should always be comfortably clad, and the animal temperature carefully regulated and maintained. The mental exercises must invariably be attended to. If the patient be a student, it is all important that his mind should be allowed relaxation during incipient digestion, and especially at the approach of the period for evacuating the bowels. If possible, he should make that the chief object of his attention for the time being. These observations apply with equal force to artisans, or other persons of sedentary habits. It will seldom be necessary to employ internal remedies in this form of constipation, unless the case is distinguished by unusual obstinacy in refusing to yield to enemata. And generally, when such is the case, the secretions from the liver, as well as from the other organs concerned in the complex exercises of the digestive function, are defective, and the case ceases

to be simple constipation from broken habit: it is then complicated constipation, of which there are several varieties.

Constipation complicated with defective biliary secretion generally supervenes upon simple constipation which has been neglected, or improperly treated. It does, however, in some instances occur as an original affection, induced by a variety of causes. I have often met with it as the consequence of jaundice, catarrh, measles, continued fever, and irregularity, or excesses in the use of food and ardent spirit. It occasionally co-exists with, or follows melancholy, spermatorrhœa, impotence, female sterility from defective menstruation, amenorrhœa, and chlorosis. Early in its progress, the appetite fails or becomes capricious, and digestion is executed with difficulty. Commonly there is gastric or enteritic pain, heartburn, acidity, flatulence, oppression of the stomach after meals, occasionally nausea and vomiting, coming on suddenly after eating; headache, more or less fever of evenings, thirst, a coated tongue, depression of spirits, in some cases bordering on melancholy; and insomnia, or imperfect sleep. The secretions are generally defective, though not always in degrees of equal intensity. As was remarked of the alvine discharges in the simple form, they are in this variety usually solid, and exceedingly dry—their expulsion being often attended with difficulty and pain, and occasionally with laceration of the verge of the anus, and hemorrhage; or, passing into chemical transmutations from long detention in the intestinal cavity, the feculent matter becomes semifluid, and is discharged during the diarrhœal state it generally superinduces; and these opposite conditions of the feculent contents, as well as of the bowels, usually continue to alternate after irregular intervals, until the morbid state upon which they depend is corrected, or graver results follow. The tendency of this form of constipation is to augment in violence, and to superinduce structural disease of the organs chiefly implicated in the most prominent functional disturbances from the commencement; and, finally, to lay the foundation of dyspepsia. And it is often met with among students; artisans who confine themselves closely on their seats; females of unequal tempers, or of melancholy; desponding dispositions; or, of sedentary or studious habits. It is to be regarded chiefly as a functional disturbance, especially in its early stage; and the irregular febrile reaction, as well as the other disturbances connected with it, is the product of functional irritation, and is entirely sympathetic.

The *treatment* demanded in this variety of constipation does not differ essentially from that already pointed out in the simple. Enemata will be required, and should be employed as advised under that head. Generally, the perverted secretory action of the liver will demand for its correction agents that influence the secretion of bile. In some instances, the cautious employment of the blue pill, administered at night, will greatly improve the action of the liver. This remedy, however, should be seldom used, as it tends to depress rather than to exalt the secerning process of the liver, when its disorder is chiefly functional. A remedy I have often resorted to in these cases,

is the rhubarb root taken a few minutes after dinner, and at bedtime. From three to four grains of the root sliced off, chewed, and swallowed daily, will, in many cases, prove highly beneficial, not only in restoring solubility to the bowels, but in completely disembarassing the secretory exercises of the liver also; and the only objection that can possibly be urged against the use of it, is its tendency, with certain constitutions, to act unduly on the kidneys as a diuretic, and in that way defeat its aperient operation on the bowels. To be beneficial, the rhubarb must be perseveringly used after it is once commenced with; and the quantity should be frequently varied, to guard against the formation of a habit during its employment, that might impair the aperient effects of the remedy. A combination of aloes and supercarbonate of soda, in watery solution, I have also frequently employed in this form of constipation, with great benefit. Prepared according to the annexed formula,* it proves a most valuable aperient, acting both upon the liver and muciparous cryptæ of the intestines. It also effectually corrects and prevents acidity of the primæ viæ; and doubtless, to some extent, proves assimilative, especially when oily substances are freely used as food. The small bulk of fluid which holds in solution the requisite quantities of the aloes and soda, renders the remedy far less disagreeable than might be expected, from the well-known bitter taste of aloë—the active constituent of the solution. Age improves the remedial action, as well as the taste of this compound. After the solution has been prepared seven or eight months, or longer—for the older it is the less of the bitter taste it possesses—the remedy may be taken without tasting the aloes except very slightly. With many persons the taste is rather agreeable than otherwise, especially after using it awhile; and with all who have made satisfactory trials of it, it never fails to become a favourite remedy.

The proper times for using this remedy are a few minutes after dinner, and supper—from twenty-five to thirty. The usual dose is a fluidrachm, or a teaspoonful, but it may be augmented considerably beyond that quantity—even to an ounce in some cases. I have generally varied the dose, so as to secure the

* *Aperient Solution*.—R. Aloes socat. ℥iiss; Super carb. sod. ℥vj; Water Oiv; Spirit lavand. compos. f ℥ij. After digesting for fourteen days, the clear liquid may be decanted; or it can be suffered to remain on the feces. Age greatly improves this aperient, both in power and taste. In 1831, a case of dyspepsia occurred in my practice, with an extremely delicate female of strumous liability, whose habit was decidedly costive. She could not bear aloes in the form of pill or tincture. The pill, or powder, invariably induced most troublesome hemorrhoids; while the tincture as constantly disagreed with the stomach and head, by reason of the alcohol it contained. Aloes I believed necessary to her recovery, as mercury was totally inadmissible as a cathartic, and because her catamenial flux was irregular, or suspended; and the liver acted so imperfectly as to endanger the mucous membrane of the intestines, from the long suspension of the biliary secretion. In this state of the case, I first employed this compound as an extemporaneous prescription: it met all of the indications; the lady recovered; since which time I have often used it. I claim for myself the sole credit of originality in the invention of this compound.—J. P. M.

aperient effects without causing much disturbance of the bowels. A single dose will sometimes meet the indications; and when one only is used, bedtime should be selected for its administration. The solution for exhibition may be diluted in half a gill of fresh water, or even more if desired.

This aperient is applicable to nearly every example of the variety of constipation now under consideration, with the single exception of that distinguished by an alcalescent state of the stomach. It may be employed with safety even in the constipation of pregnant females. I have frequently used it in constipation attended with hemorrhoidal tumours about the verge of the anus with entire safety and great benefit. Indeed, it is allowable in all cases of constipation unattended with fever and acute inflammation, and will generally be found highly beneficial. I have employed it with singular advantage in nearly every variety of perverted menstruation attended with constipation, with which it corrected both the costive habit and the disordered menstuous action. Indeed, I now regard it as a valuable emmenagogue, when constipation exists as a concomitant morbid condition, and the dysmenorrhœa is unattended with fever and inflammation.

In constipation connected with long-continued derangement of the biliary system, or what is sometimes termed bilious dyspepsia, distinguished by an icterode discoloration of the eyes and skin, anorexia, flatulence of the stomach and bowels, frequently acidity of the stomach, nausea, and occasionally vomiting, general fading or blanching of the complexion, shortness of breath, occasionally œdema, scant and high-coloured urine, now and then thirst, generally a feeble pulse, a dry skin, and irregular fever, or rather febricula, with increasing debility, it will be found the most useful aperient that can be employed. In some of the cases of this description, it will be useful to associate the nitro-muriatic acid mixture with the aloetic aperient, especially should the torpor of the liver be of long continuance and the biliary secretion greatly defective—the acid to be administered in doses of from seven to twelve drops, twice daily, before meals, or used epidermically, until a slight impression is manifested by it through the biliary and salivary systems, while the aperient solution should be employed after meals, as already advised. After this, the acid may be resorted to, according to circumstances. In many cases of this kind, however, perfect cures have been effected by the use of the aperient only, or that remedy and the cold infusion of the wild cherry bark, taken of moderate strength before meals.

After having carefully observed the effects of the aperient solution, I am decidedly of the opinion that it acts as a biliary secernent, and to some extent seems to subserve the uses of the bile itself, in promoting secretion throughout the mucous lining of the enteric cavity. It also promotes digestion, by favouring the ready assimilation of oily food, as well as by preventing undue acidity of the ingesta taken in as food.

I have often employed this aperient in the constipation of hysterical and hypochondriacal persons with great benefit. When used in these cases, some

nervine incitant may be united with it, such as the tincture of valerian, or castor.

In the constipation of the convalescing stage of fever, after patients begin to take solid food, it will be found of great value in guarding against relapse, by regulating the bowels, and through its tendency to promote digestion. The doses, however, should be small, and the remedy cautiously administered. With students of sedentary habits, who cannot always procure the means for using enemata, it is the very best remedy in the world for obviating the constipation so troublesome and health-destroying with them at that interesting and important period of their lives. If used regularly, their bowels will seldom ever become constipated; and the use of the remedy is not attended with inconvenience nor trouble, and never interferes in the smallest degree with study or diet.

II. *Worms in the Intestinal Cavity*.—Without attempting to give the pathology of intestinal or gastro-intestinal worms, I will merely offer a few practical remarks in regard to the treatment of some of the diseases connected with their presence in the enteritic cavity; and first of

Diarrhœa.—It is by no means uncommon for this affection to co-exist with worms in the intestines, and occasionally a most troublesome and intractable disease is the consequence. This diarrhœa, which I have for many years termed verminous, is more liable to occur during the warm damp seasons of spring and early summer—the season most propitious to the prevalence of cholera infantum—but may make its appearance at any season or period of the year. It now and then supervenes upon cholera infantum when that disease has continued for a length of time, and assumes subacute characters. In many instances, it follows catarrh introverting upon the mucous membrane of the intestines, the improper use of fruit, and indigestible food. Once induced, it seems to be kept up by enteritic verminous irritation, and is absolutely incurable unless the entozoa are expelled. In some cases, the emaciation attendant upon the diarrhœa is extreme, and it is by no means uncommon for it to prove fatal. Throughout the whole course of this troublesome disease, there is more or less fever, but in the early stage especially. And it is not by any means unusual to find the stomach more or less irritable, occasionally resulting in vomiting after the imbibition of drinks or liquid nourishment. The alvine discharges are exceedingly thin, fetid, often watery, but of variable colour. Thirst is an abiding symptom as well as a most troublesome one. Generally, the appetite is greatly impaired or entirely extinct, or voracious.

In treating this affection in its early stage, especially if there is much fever, a moderate dose of calomel, succeeded by a brisk cathartic, will generally mitigate or put a stop to the disease. From three to eight grains of calomel given at bedtime, succeeded by a dose of warm oil, or half an ounce of the syrup of rhubarb, or the ordinary dose of the infusion of senna for chil-

dren, will in most cases meet the indications. In some of these cases, I have succeeded in arresting the disease promptly by administering commanding doses of blue powder. A dose of ten grains, given morning and night, mixed in a cup with dry brown sugar, and washed down with water, tea, or milk, for three times, will often arrest the disease in its early stage promptly. Frequently, a single dose will be sufficient. In some instances, too, I have promptly put a stop to the disease by giving half an ounce of the syrup of rhubarb morning and night for two or three times; and, generally, when the complaint is relieved, worms have been more or less freely expelled.

It is in the subacute or chronic stage that most difficulty is generally met with in treating verminous diarrhoea, as the subjects of it are then considerably emaciated and enfeebled, and the disease is rapidly tending to disorganization of the mucous lining of the intestines, as well as to effusion upon the brain.

The treatment now required should consist of aperients, and such agents as exert a supporting influence with the organism. To meet these demands, I have, within the last five or six years, employed a combination of syrup of rhubarb and the tincture of diospyros Virginica,* with distinguished benefit. A drachm of the syrup, and from ten to fifteen drops of the latter, administered two, three, or four times daily, constitute the compound I have employed. If the case prove obstinate, a few drops of spirit of turpentine may be united with the compound, once or twice during the day, especially with morning and night doses, say from ten to fifteen. Or the turpentine may be applied epidermically, by anointing the hypogastrium with a liniment formed of spirit of turpentine and lard, in the proportion of half an ounce of the former and six ounces of the latter; or of weaker strength, if the patient be greatly emaciated and young. The compound syrup above mentioned, in numerous instances in which I have employed it, has speedily arrested the diarrhoea, and as uniformly been followed by the expulsion of numerous lumbricoid worms. In some cases of long standing, attended with very great emaciation, the diarrhoea was arrested, and vast quantities of worms discharged, in twenty-four hours, and the child virtually cured in that time. More commonly, however, several days were required in such examples before the disease would yield; and in all cases it was my practice to continue the remedy by administering an occasional dose of it until convalescence had considerably advanced, and to resume its use upon the slightest return.

With the older description of subjects, say from four to six years of age, I have used a combination of the aperient solution with the syrup of rhubarb and tincture of diospyros with much advantage in verminous diarrhoea. In these examples, the secretion of bile, and its presence in the enteritic canal,

* The formula for its preparation will be found in my paper "On the Use of the Unripe Fruit of the *Diospyros Virginiana* as a Therapeutic Agent," published in the October number of the *American Journal* for 1842.

are more important to the healthy exercises of the organs co-operating with the liver, in the performance of the digestive function, than in earlier infancy; and the good effects of the aloetic with such are mainly due, doubtless, to its action as a biliary secretant. From half a drachm to a drachm of the solution may be given once or twice daily, in combination with the syrup of rhu-barb and diospyros, and repeated until the evacuations ameliorate.

The diet, in each of these forms of diarrhœa, should be regulated with care. In most of the cases, I found new, warm cow's milk to agree best, if mother's milk could not be obtained. Rice gruel, boiled milk, or milk thickened with flour, and chicken tea made by long boiling, were the kinds of nourishment I generally employed. Once in three or four hours, as a general rule, was often enough to allow nourishment to be taken; and, after these intervals, it should only be received in small quantities at a time.

The tendency to introversion upon the internal organs being constant in these affections, by reason of the bloodless state of the surface, and its variable temperature, flannel should generally be put on next the skin. To guard the encephalon against effusion, an occurrence so liable to take place in these affections, I have invariably resorted to blisters over the head, or behind the ears, upon the slightest appearance of cerebral irritation. And for the purpose, I always employ the strong acetous tincture of flies; and I never cut off the hair, as the "fly-vinegar" acts quite freely enough without. After wetting the scalp, cover the head with a leaf, or oiled silk cap, and in an hour or two blisters will form.

III. *Uterine Hemorrhage.*—Since 1838, I have relied chiefly upon internal astringents in treating the subacetate forms of this disease, in connection with aperients and spinal cupping; and, in a majority of the cases, my chief dependence has been on the tincture of the diospyros. When the hemorrhage is connected with an excited pulse and a warm dry skin, I have generally preferred to commence the treatment with a solution of the sulphate of alum and nitrate of potash, in the proportion of five or ten grains of the former, and six or eight of the latter, to the ounce of water. Sweetened with refined sugar, the dose is quite pleasant, and seldom offends the stomach. If it does, the quantity of alum and nitrate may be reduced. The doses may be repeated every hour, or once in two or three hours, until the hemorrhage moderates or ceases. As an aperient, the solution of aloes and soda, already noticed in this paper, may be employed nightly, or oftener, if necessary; or a pill of aloes, jalap, and colocynth in powder, of proper strength, can be used. If the case, however, be of decidedly subacute character, or depend on mere engorgement of the uterine vessels, the tincture of diospyros will be found most applicable; and I have generally employed it in preference to all other astringents, and with the happiest results. It may be administered in doses of one or two drachms, after intervals of one, two, three, or four hours, properly diluted, and sweetened if desired. This remedy will be proper, too, even in the more

acute forms, if the stomach reject the alum, or sugar of lead, as will often be the case. In the hemorrhage, or perhaps menorrhagia, often occurring with females near the critical period of life, and frequently attended with debility and anemia, it will be found eminently useful. Indeed, it is safe, as well as applicable, in all examples of uterine hemorrhage, after much blood has been lost, even floodings supervening upon parturition, or any stage of gestation, in connection with the tampon.

IV. *Diarrhœa*.—This affection is often connected, from its commencement, with relaxation of the mucous lining of the intestinal canal, and the discharges by which it is characterized are the product of effusion from the muciparous cryptæ, rendered incapable of the secretion of mucus by reason of such relaxation. It is also induced by œdema of the submucous cellular texture of the enteritic lining membrane. And it occasionally makes its appearance in connection with the highest degrees of irritation and inflammation of the mucous lining of the intestinal canal. Little difficulty will be experienced in the diagnosis of diarrhœa dependent upon debility or relaxation; and, although less clearly marked, that form connected with œdema of the submucous textures of the lining membrane of the intestinal cavity cannot be easily confounded with it, or the diarrhœa of exalted degrees of irritation or inflammation. The absence of fever, as well as of the acute symptoms invariably attendant upon diseases of inflammatory or acute character, and the presence of vascular depression, will generally establish the diagnosis of diarrhœa dependent on debility or relaxation. While the dropsical diathesis, and frequently a general disposition to œdema or coexisting dropsy, will indicate the œdematous variety. And the enteritic pain and inflammation, with the general febrile disturbance attendant upon the alvine discharges, will as clearly point out the existence of the acute form.

The *treatment* of acute diarrhœa of course is to be conducted upon general principles. The lancet will occasionally be required to combat the general fever and local inflammation, as well as mercurial, succeeded by oleaginous or saline, cathartics. Refrigerants will also be demanded, especially cool mucilaginous drinks. In many cases of acute catarrhal diarrhœa, I have succeeded in relieving the symptoms promptly by one decisive bleeding and ten grains of calomel, followed by an oleaginous or saline cathartic, administered three or four hours after the calomel. Should the first purgative prove ineffectual, a second or third will be required; and, as a general rule, blue mass or blue powder should be substituted for calomel after the first dose of the mercurial, and to be administered the night after the first cathartic, in combination with three or five grains of Dover's powder. In some cases, it will be necessary to associate fomentations, or even active rubefacients, to the abdominal wall, to relieve the enteritic pain. Rest and the mildest liquid nourishment will always be required until convalescence is established.

The *treatment* of œdematous diarrhœa will be influenced by the nature of

the attendant symptoms. If fever exist, and the pulse is firm and resisting, and the constitution vigorous, a course of medication decidedly antiphlogistic will be demanded. It is by no means uncommon to meet with this form of diarrhoea with labourers on the farms of middle Virginia, during the fluctuating season of spring, and especially when the labourers are engaged in the "warm-cold work" of burning "plant heads" in March, after a wet winter. In this example of diarrhoea, bleeding, active purging with calomel and oil, or a combination of magnesia and sulphate of magnesia, or "salts and senna," diuretic demulcent drinks, diaphoretics, and restricted diet will generally speedily arrest the disease. Sometimes, however, the case proves obstinate, and even threatens to result in confirmed dropsy. It will then be necessary to vary the treatment somewhat, and to render it both antiphlogistic and alterant. Mercurials, in combination with diuretics, will best meet the indications; and they should be urged to the extent of producing ptialism. Combinations of calomel, or blue mass, and squill will form the best mercurio-diuretic; two grains of the former, and two-thirds of a grain of the latter, with two grains of nitrate of potash to each dose made into pills—a dose to be administered three times daily. In some cases, I have employed the mercurial in combination with the nitrate of potash, and one grain of ipecacuanha, or one-fourth of a grain of tartar emetic without the squill, and found it answer exceedingly well. Now and then I have resorted to active emetics of tartar emetic, squill, and calomel, administered morning and evening until the symptoms ameliorated, which, if proper depletion has been premised, will be the case after the second or third emetic. This treatment is particularly suited to those cases tending to implicate the pectoral cavity as a seat of dropsy; but it may be employed with signal benefit in the purely abdominal form also. For some time after the diarrhoea ceases, as well as the symptoms generally, it will be important to maintain the bowels soluble, or dropsy may ultimately supervene.

The *treatment* of diarrhoea connected with debility is sometimes attended with much difficulty. In its early stage, it will generally be necessary to employ some form of mercurials as a preparatory step; and blue mass, or blue powder should usually be preferred. When the mercurial is administered, night should invariably be selected for its exhibition; and it will be advisable, generally, to combine with it a few grains of Dover's powder, say from three to five grains. The mercurial will be indicated when the biliary secretion is essentially defective, or when the tongue is coated or apthous. In many cases, it will not be necessary to follow the mercurial with a brisk cathartic, but to allow that remedy to "work itself off." Sometimes, however, a brisk cathartic will be required, and in many cases a moderate dose of oil, or the syrup of rhubarb will be found to answer the best purpose. A brisk cathartic will generally be required when the evacuations are highly vitiated. The purging in this disease must be repeated at least once in two days, as long as the evacuations are decidedly unnatural as to consistency and qualities; and if the diarrhoea does not yield, astringents will then be required.

In many cases, daily purging with moderate doses of the syrup of rhubarb will arrest the diarrhoea, and a cure follow. This will be the case when the discharges are only slightly vitiated. When the disease has existed for some time, it will generally require the use of astringents before a perfect cure can be effected; and, according to my individual experience, the tincture of the diospyros, or a strong tea or infusion of the unripe fruit, meets the indications most perfectly. The tincture may be administered in drachm doses, or even in larger, if need be, two or three times daily, until the diarrhoea is arrested. Occasionally I have united it with half an ounce or more of the syrup of rhubarb, to form an astringent cathartic; and have found the compound a most valuable remedy in speedily arresting the diarrhoea. This compound is best adapted to recent cases, or such examples as are distinguished by seromucous discharges without pain. When much debility exists, the tincture may be combined with Port wine, in quantities sufficient to excite the vascular system in some degree. In this form, I employed both the tincture and infusion, some years since, very successfully, in the treatment of some protracted and exceedingly bad cases of diarrhoea, following attacks of the bilious fevers of Mississippi. The infusion is applicable to a large majority of the cases of subacute or chronic diarrhoea, attended with more or less general fever; while the tincture is best suited to the cases distinguished by marked debility, and decided inaction of the heart and arteries, and irregular depressing fever.

PRINCE EDWARD C. H., VA., June 13th, 1849.

ART. XI.—*Large Vascular Tumour—Ossification and Obliteration of the Ascending Vena Cava.* By G. L. COLLINS, M. D., Providence, R. I., one of the Physicians of the City Hospital.

PALMER BRIGGS, a native of this State, æt. 34 years, single, temperate, dark complexion, hair and eyes dark, was admitted into the City Hospital 7th month 3d, 1849, at which time I obtained from him the following history of himself.

He was born in the country, and during the early part of his life worked on a farm. For five years previous to 1845, he was employed in school-teaching, and for the last four years, or as long as he was able to work, he has been engaged in the grocery business in this city. He enjoyed good health until 1841, when he had a severe attack of rheumatism, which continued with more or less severity for two years. He was confined to his bed nearly a year of the time. During this sickness, he took a great quantity of medicine, and, from his report, a large quantity of mercury, under the specific effects of which he laboured for a long time. He believed that he was finally cured of the rheumatism by "steaming," a process that was often repeated

for a period of six months or more. He has had within a few years several large superficial ulcers on the legs, which are now healed, leaving permanent dark cicatrices.

In the 10th month, 1847, he first noticed a "small bunch" on the left side of the os coccyx, which gradually enlarged, until by its size it began to offer some obstruction to defecation; there was no appearance of hemorrhoids, nor did he suffer pain. It continued to increase pretty rapidly, extending outwards and upwards until the 2d month, 1849, when it had reached a very great size, rendering him entirely unfit for any business. About this time, he was seen by Dr. M. Parsons, and afterwards by Dr. L. L. Miller of this city, the latter of whom sent him to Boston for the examination of Dr. Lewis, where he was seen not only by him, but by several of Dr. Lewis's professional friends, whose interest was awakened by the size of the tumour, and the enormous enlargement of the abdominal veins. The tumour was unmistakably vascular in its nature, and to so great a magnitude had the disease arrived, and so formidable was it in its appearance, that it was not thought proper to attempt any means for a radical cure. It was therefore advised to give support to the mass by strapping, and other mechanical means to guard against a rupture of the distended vessels, which were extremely large, tortuous, and very superficial, and which would probably be attended by a dangerous hemorrhage. Within a few weeks, however, a rupture did take place, and a most profuse and alarming hemorrhage was the result; the quantity of blood lost was great. The bleeding was, however, arrested, but returned after the lapse of a week, with much violence, though not equal to the first. There was at no time any pulsation in the tumour. In the 3d month, he put himself under the care of a young physician, of this city, somewhat irregular in his practice, for the purpose of having a radical cure performed. This gentleman had conceived the rather bold idea of producing a permanent cure by puncturing the tumour with hot needles, as is frequently practiced so successfully in cases of *naevi materni*. He accordingly introduced them freely about the base of the tumour, at three different times at intervals of two or three weeks, after first causing the patient to inhale chloroform. The effect of this treatment was not only to coagulate the blood, but to convert it after the lapse of a short time into a suppurating tumour.

I have a cast of the tumour taken about the first of 2d month, by Dr. Fisher, a dentist of this city, and kindly given me by him, the dimensions of which are by a vertical line running from a point near the anus towards the left sacro-iliac symphysis, thirteen inches, by a transverse line over the most prominent point of the tumour, ten inches. This was not taken, however, when it was largest, as its size had been considerably reduced by the hemorrhages.

At the time of his admission into the hospital, he was greatly reduced by the frequent bleedings, and the copious discharge that was constantly going on from the tumour. He was much emaciated, extreme debility, was unable to

stand without assistance, tongue dark-coloured, and dry, pulse frequent and small, countenance anxious. His bowels were moved with much difficulty, and never without the aid of an injection. There were two openings into the tumour upon its most prominent part, each about the size of the little finger, one inch apart, and both leading into the same cavity. A probe could be passed into this cavity, with little obstruction, five inches in one and about three inches in several other directions, the silver always returning quite blackened. The discharge, which was very copious, consisted of a thin grumous fluid, so offensive as to render the air of his room almost intolerable. Occasionally a tortuous, cylindrical mass, four or five inches in length, and half an inch in diameter, was drawn out, appearing to be a portion of enlarged vein, filled with coagulated blood. The superficial veins of the abdomen were enormously enlarged. Zigzag lines of varicose veins, communicating with the femoral below, ran up to inosculate above with the mammary, or with the axillary, as some of them evidently did. Many of them were of a size almost and some even quite as large as the small intestines; indeed, the patient, at first, as he told me, believed them to be his intestines, which, owing to his emaciated condition, could be perceived through the parietes of the abdomen.

He was put at once upon a tonic and restorative course of treatment, under the use of which he soon began to mend. His tongue became moist and clean, his pulse less frequent and fuller, his strength rapidly increased, and in a few weeks he was able to rise from the bed and walk about the house, by the help of a cane. His bowels, which so long had refused to act, were relieved, once only, by an injection, the second day after his admission. On the third day following, they were moved by a small dose of castor oil, after which they remained sufficiently open without the use of medicine. The cavity of the tumour was injected every day with dilute liquor sodæ chlorinatæ, and a cloth, saturated with this liquid, was applied externally. He thus continued without much change in his general condition for about two months, the tumour gradually growing smaller, and the discharge from it as gradually diminishing.

Two weeks after his admission into the hospital, it was noticed that some of the smaller of the enlarged veins, situated towards the left side of the thorax, were becoming obliterated by the spontaneous coagulation of the blood. This process gradually went on, each week presenting an additional section of the mass of varicose veins thus firmly closed. This seemed to be accompanied by a considerable local inflammation, evinced by great tenderness and a dark-red line following the course of the obliterated vein, which could be felt as a firm cord beneath the skin.

About the first of the 9th month, his bowels became deranged, and from being moved with difficulty became too open. The discharges numbered from six to twelve daily, upon which opium and astringents had no effect. His strength began again to decline, his feet and legs soon became œdematous,

and he was frequently seized with violent fits of palpitation of the heart, during which the pulse would sometimes become too frequent to be counted. He complained also of great coldness of the lower extremities, rendering artificial warmth frequently necessary.

For twenty-four hours previous to his death, which took place 11th month, 4th, he was wholly unconscious, though apparently suffering very great distress. He lay upon his back, the extremities cold and pulseless, the eyes turned upwards and fixed, with the pupils dilated, the jaws firmly closed, but the teeth often violently grating, the arms widely extended, and thrown about, and the head constantly rolling from side to side. This state of extreme uneasiness and distress, which was truly painful to behold, continued until a few hours before he expired, when he became tranquil, but still insensible, and thus died.

Autopsy. 11th month, 5th. Twelve hours after death. Present, Drs. J. Mauran, L. L. Miller, H. W. Rivers, L. W. Clifford, J. W. C. Ely, N. Miller, and others.

The body considerably, though not extremely, emaciated; both legs œdematous, the right more so than the left. The external veins of the abdomen mostly obliterated; in some, the coagulum was entirely absorbed, in some only partially, and in others, the coagulation was still imperfect. The femoral veins were plugged up with firmly coagulated blood, as were the saphenas in their upper portion.

The tumour was flattened externally, and scarcely one-sixth of its original size. The openings, which had been converted into one, soon after he was admitted, had diminished to the size of a large goose-quill, and had continued to discharge until the time of his death.

The chest was large and full. The lungs were in a normal condition, with the exception of some slight old pleuritic adhesions on the right side. A little serum, perhaps three ounces, was found within the pleura, upon the left side. The heart was rather below the average size, and of a lax fibre. The right side filled with blood. The usual quantity of serum was found in the pericardium. The valves were all in a healthy state. The inner surface of the ascending aorta presented a thin false membrane, which could be detached in flakes of considerable size; it was otherwise healthy. No ossification in any part of the heart. The internal mammary veins were enlarged, but pervious. The descending vena cava was about the usual size, and distended with blood. The abdominal aorta was perfectly healthy, as were its branches. The ascending vena cava was of the usual size, and healthy to a point, tracing it downwards, a little below the origin of the right renal vein, when it became at once impervious, terminating abruptly in a sort of cul-de-sac. Below this point for two and a half inches, the vein was converted into a firm cord, about two lines in diameter, in the substance of which was a deposit of compact bone, sufficiently firm to arrest the passage of the knife without the application of considerable force. The vena cava from this ossific de-

posit to its bifurcation was converted into a dense impervious cord, as were the common iliac veins, though the latter retained a trace of the tubular form, as a small probe could be passed through them. The external iliac veins gradually enlarged as they passed downwards, until under Poupart's ligament, when they were of the normal size, but were still closed by a mould of firm coagulated blood. The internal iliac veins were diminished to the size of a crow-quill, closed by an old coagulum, and seemed to be lost in the remains of the tumour, as was the case with some of the branches of the internal iliac arteries. The other viscera of the abdomen were healthy, with the exception of the mucous membrane of the lower part of the ilium and that of the colon, which was red, congested, and in some places, thickened. The bladder was forced a little upwards out of the pelvis, but was healthy. The rectum lying, upon the anterior surface of the tumour, was carried forwards so as to make a curve equal to that which it usually makes posteriorly. It was healthy, and in nowise implicated in the disease.

The remains of the tumour occupied a position behind, and a little to the left of the rectum; they were reduced to about the size of a foetal head, and consequently occupied nearly the whole strait. The mass lay a little below the sacrum, and pressing upon the lower portion, a part of which had been absorbed from its pressure. It contained two cavities, one with its walls collapsed and communicating with the external opening; the other above, and separated from the first by a wall about half an inch in thickness, contained about a gill of thin offensive pus. The remainder of the tumour was firm and compact, about the colour of liver, and had lost almost all appearance of vascularity.

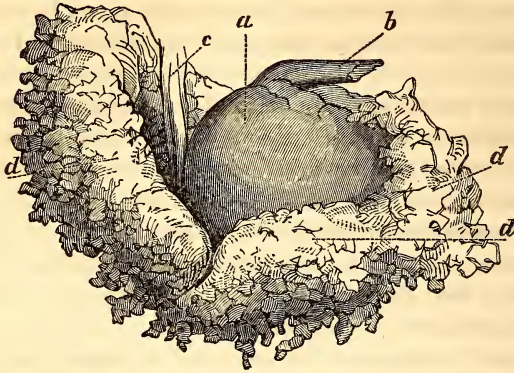
ART. XII.—*Case of Excision of the Uterus.* By PAUL F. EVE, M. D., Prof. of Surgery in Med. Coll. of Georgia. With Remarks, by C. D. MEIGS, M. D., Prof. of Obstetrics and Diseases of Women and Children in Jefferson Med. Coll. of Philadelphia.

TO THE EDITOR.

DR. I. HAYS—DEAR SIR: When Professor Eve, of Augusta, Georgia, passed through Philadelphia, on his return from the meeting of the Association at Cincinnati, he gave me a pathological specimen, which is now in my museum. This specimen consists of the uterus of a woman of colour, which was removed by Professor Eve, in the hope that, by such a desperate operation, he might be able to rescue the patient from the imminent death which seemed by no other means to be avoided. The uterus, which he removed in the manner described in his letter, has been very much changed in its external form by the ravages of a cauliflower excrescence.

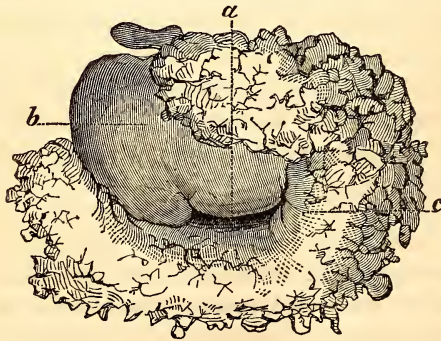
The two drawings that accompany this note give very faithful representations of the object in question. Fig. 1 shows the organ seen in a front view,

Fig. 1.



a being the fundus and corpus uteri, *b* the left Fallopian tube cut off in the operation, *c* the right Fallopian tube, while *d d d* indicate the os and the cervix uteri in a state of complete ectopia; that is to say, the cervix is turned inside out by the enormous swelling and the ravages of the cell-force situated within that structure. The drawing, which was made in my camera lucida, is reduced by the engraver so as to represent the womb only one-third as large as the specimen. It shows that the ectropy of the cervix has nearly buried or invaginated the body of the organ. Fig. 2 exhibits a view of the specimen

Fig. 2.



taken from below, or looking direct towards the os uteri, which is seen at *a*; while *b* and *c* exhibit the extroversion of the os uteri, and the remainders of the cauliflower excrescences developed by the disease.

I do not know that any American surgeon has heretofore extirpated the entire uterus *in situ*—an operation that is said to have been first performed by M. Sauter, of Constance, in 1822.

M. Colombat de l'Isère informs us that the operation has been executed by Sauter, by Hoelscher, twice by Siebold, and thrice by Langenbeck; four times by Blundell; once by Bauner; once by M. Lizars; twice by Récamier; once by Dubled; twice by Roux, and once by M. Delpech; while this operation by Professor Eve adds one integer to the whole number, which amounts to twenty operations, in all of which the result was contrary to the hopes of the surgeons.

M. Colombat expresses the opinion that operations for the removal of the womb *in situ* ought not to be in future performed, in consequence of the disastrous summing up of the statistical records. He does not apply his objections to the cases of incurable inversion of the organ.

There are too many examples of recovery after extirpation of the inverted organ to leave any doubt on the mind as to the hopefulness of such an operation. Still, as I have firm confidence in the opinions I have published in other places as to the power of spontaneous cure of *inversio uteri*, I should hesitate long before resorting to the measure of extirpation. In my friend's operation, there is cause to congratulate him upon the skill and resolution manifested by him, and upon the very hopeful success up to a certain point.

The following extract, from Prof. Eve's communications, will show that, but for the recommencement of the original heterologue development in the vagina, the patient had, in the most remarkable manner, been rescued from death.

I send you herewith an extract of a letter from Prof. P. F. Eve; also, a letter from Dr. J. A. Eve; and, lastly, extracts from two letters from the surgeon.

Very respectfully, your obedient servant,

CH. D. MEIGS.

"On the 16th of April last, I removed the entire womb from a patient, who has recovered. The operation was performed at my surgical infirmary, in which I was assisted by my cousin Dr. J. A. Eve, Professor of Obstetrics and Diseases of Women and Infants, and by Drs. Murray, H. Campbell, Longstreet, and Montgomery, and in the presence of several others connected with the profession.

"The patient is a negro woman, twenty-eight years of age, has been married; but never conceived, as she believes. For more than three years, she has been labouring under uterine affection; at least, she has been annoyed for about that length of time by a vaginal discharge. The history of diseases among our negro population is generally very imperfect and unsatisfactory; and this is especially true as regards uterine derangements. All we can obtain, in the present case, is that the patient experienced great irregularity in menstruation, and had frequent hemorrhages from the vagina."

Yours, &c.,

P. F. EVE.

We now refer to Dr. J. A. Eve's statement of the case, as he observed it before she arrived at the infirmary in Augusta.

Augusta, April 24, 1850.

DR. P. F. EVE:—

MY DEAR DOCTOR: Early on the morning of the 10th instant, I was called to visit Mary, the patient, whose womb you extirpated on the 16th, in consultation with Drs. Murray and Cook, some eleven or twelve miles from town.

Under the influence of morphine, which had been given before my arrival, the patient had become easy. On examination, I found a tumour of considerable size in the hypogastrium, and the whole pelvis, to the outlet, filled and blocked up with a lobulated, convoluted, incomprehensible mass, from which issued a copious and horribly fetid discharge.

As this was unquestionably carcinoma, cauliflower excrescence, encephaloid tumour, or some malignant growth, the patient's certain doom was death, after a few months, or at most a year, of miserable existence worse than death, unless rescued by surgery, in the performance of a heroic operation which would involve the removal of a portion or the whole of the uterus.

If such an operation would ever be indicated or warranted, the age (twenty-eight years), the vigour of constitution, and the comparatively unimpaired general health of the patient, made it proper in this case.

In consultation, I suggested to Drs. Murray and Cook that, as neither of us could take charge of, or do justice to, her case, so far from our respective residences, she should be removed, as soon as practicable, to your infirmary, where she would enjoy every advantage and benefit that favourable circumstances, as well as science and art, could afford her case; and that we should all meet and confer with you after her removal to this place; to which suggestions these gentlemen cordially acceded.

I know nothing of the previous history of this case except what has been related to us by Dr. Murray. In consultation, all the physicians present concurred in opinion with you, that the operation was one of extreme danger, and that the probabilities were as many, perhaps, as a hundred to one against its success.

Before the operation, Dr. Murray and myself visited the patient, explained to her its great danger, and the very great probability that she might not survive it; telling her that, although it afforded but little hope, it was the only hope of delivery from suffering and death. We told her, farther, that it rested entirely with herself to determine whether or not she would submit to the operation. Without persuasion or influence of any kind, she determined promptly and unhesitatingly to submit to the operation, terrific as it was represented to be. She is now doing well, and in all probability will return home next week. Your sincere friend,

J. A. EVE.

Operation.—The bowels having been previously emptied, a large quantity of urine was drawn off by the catheter, which diminished considerably the hypogastric tumour, and proved the bladder to have been generally distended, as there was then no urgency to micturition—in fact, the patient was unconscious of the distension. About two pints were thus evacuated. Chloroform was now inhaled to its full anæsthetic effects, when the vaginal tumour was seized by various forceps, but which, after large tubercular masses were torn off, was finally brought down to the os externum by the left hand. Finding it impossible to remove the firm resisting body now presented to view, it was carefully excised from above downwards, or in an antero-posterior direction, by the knife—I confess, with some suspicions at the time, it might be the uterus. One artery (now believed to be the left uterine), throwing out blood quite vigorously, was seized, and an animal ligature cast around it. A solution of sulphate of zinc was applied to restrain further hemorrhage, which had been considerable.

There was no protrusion of the bowels, nor was the case followed by any very severe symptoms. A most rigid confinement to the horizontal position was strictly enforced for about ten days, with absolute diet, &c. &c. The bladder, it is presumed, filling up again, pushed the intestines backwards, while the opening made into the peritoneum was closed by agglutination and subsequent adhesion. The rectum was evacuated on the fourth day after the operation by warm water, and the bowels were moved freely by oil on the fifth.

In the mass removed, the uterus is readily recognized, with its Fallopian tubes, broad and round ligaments; but the os tincæ is involved in the encephaloid degeneration. The tumour in the vagina was about the size of a child's head at full term. No one, it is believed, who has examined it has entertained the least doubt but that the entire womb was removed, and this includes, besides the gentlemen who witnessed the operation, Dr. R. D. Mussey, Prof. of Surgery in the Medical College of Ohio, and Chairman of the Committee on Surgery for the past year in the American Med. Association; and my preceptor, Dr. C. D. Meigs, the distinguished Prof. of Obstetrics, &c. &c., in the Jefferson Med. College, with whom the uterus has been deposited, and who has kindly insisted upon presenting the case to the profession in his own way.

During my absence at the meeting of the Medical Association in Cincinnati, the case was left under the care of my relative and assistant, Dr. A. P. Longstreet. The patient returned home on the 3d of May, visited Augusta again on the 20th, to inquire why she had had no hemorrhages (menstruation) since the operation; and, in answer to a letter, Dr. Murray writes, on the 10th of June, that he saw her “up and about” the day before, and promised to bring her in a few days to my office.

Fifteenth of June, two months after the operation, the patient, Mary, has called, after riding eleven miles on a loaded lumber wagon. She is much

improved in flesh and appearance, and has enjoyed good health. She says there has been a slight show of blood but once since the operation, and only a moderate discharge at times of colourless fluid. But I regret to add we have most unmistakable evidence, both ocular and by touch, of a rapid reproduction of the encephaloid disease, which in all probability must sooner or later destroy life.

(Extract of a letter dated Augusta, July 29th, '50.)

MY DEAR DOCTOR: I write to say Mary, my *non-uterine patient*, is dead. She died on the 22d of July, having lived three months and a week after the operation. She became œdematous (ascites, also), but had no hemorrhage, neither protrusion of the disease from the os externum. I regret no post-mortem was made by the physician in attendance, and I only learned her decease incidentally at the time.

PAUL F. EVE.

DR. C. D. MEIGS.

R E V I E W .

ART. XIII.—*On Diseases of Menstruation, and Ovarian Inflammation, in connection with Sterility, Pelvic Tumours, and Affections of the Womb.* By EDWARD JOHN TILT, M. D., Physician to the Farrindon General Dispensary, and to the Paddington Free Dispensary for the Diseases of Women and Children. “*Omne animal ab ovo.*” 12mo. pp. 250. London, 1850.

THE importance of the ovaries in a physiological point of view renders the investigation of their several pathological conditions, with their direct and remote results, a subject of deep interest. Being the organs by which, in the female, the act of reproduction is effected, it might be inferred, *à priori*, that when they become involved in disease, not only will their immediate function be suspended, or perverted, but that derangement will, also, occur in all the acts accessory to that of reproduction; many of those affections which have, heretofore, been considered as dependent upon a morbid condition of the uterus, being, in fact, the result of disease of the ovaries—the uterus becoming involved only secondarily. Dr. Tilt, in the work before us, has endeavoured to show that the inference thus derived from the physiological rank of the ovaries is established by the result of repeated clinical observations, and has pointed out the several ways in which sterility is produced by the action of inflammation on the ovarian tissues; the great importance of ovarian peritonitis as a cause of disordered menstruation; and the influence of ovarian inflammation in the production of uterine disease; illustrated by numerous cases derived from his own observations, and those of other practitioners, British and Continental.

The work is one which deserves to be closely and candidly studied by every physician engaged in the general duties of his profession. Although the author may, perhaps, have carried his views in reference to the results of the pathological states of the ovaries somewhat beyond what the observations adduced by him strictly warrant, still, of the general accuracy of the doctrines and practical instructions presented by him, little, if any, doubt can be entertained. No one, we are persuaded, can fail to derive from the careful perusal of the present treatise much valuable information in relation to a class of diseases of frequent occurrence, the pathology of which has, heretofore, been involved in obscurity, while their treatment, to say the least of it, has been uncertain and empirical.

In an introduction of some twenty pages, the author discusses cursorily the questions: why should medicine be uncertain? what are diseases of menstruation? what is menstruation? what are the organs of menstruation? what is inflammation? and, by what influence does inflammation in the ovarian tissues produce diseases of menstruation? A prolegomenon follows, occupying thirty-nine pages, devoted to a consideration of the extraordinary confusion relative to the history of ovarian inflammation; of its frequency, as proved by the frequent detection of inflammatory morbid lesions in the ova-

ries; of the reasons for the past neglect of ovarian pathology, and for the pre-eminence traditionally assigned to the uterus amongst the organs of reproduction; of the difficulty of exploring organs so small and so deeply seated as the ovaries; of the similitude of the leading symptoms of subacute ovaritis to those of inflammation of the womb; of the popular conviction that menstruation is a natural function, for the evils attendant upon which there is no remedy, and of the repugnance of patients to submit to, and of physicians to press for an examination; followed by a sketch of ovarian bibliography from the time of Aetius to the present day, showing that medical authors, ancient as well as modern, have described the puerperal form, some few moderns the acute idiopathic, but that none have investigated the subacute form of ovarian inflammation, although many have given hints, suggestions, &c., of the existence of this form of disease; the whole concluding with an account of the different modes of ovarian exploration—abdominal, vaginal, rectal, and these two latter conjoined.

As the practice of these modes of exploration are essential to the attainment of a certain diagnosis in cases of ovarian disease, we had marked the author's account of them for insertion in the present notice, but have been obliged, in consequence of its length, to omit it.

The first five chapters of the treatise are devoted to a consideration of subacute ovaritis; its causes, symptoms, terminations, and treatment.

Dr. Tilt defines this form of ovarian inflammation, as follows:—

“Swelling of the ovaria, with increase of heat, and pain upon pressure, accompanied by intermittent or permanent pain, or uneasiness in the ovarian region, radiating to the loins and thighs, and producing, according to the constitution of the patient, an arrest of menstruation or its profuse flow, intense local pain, or hysterical symptoms.

“By *subacute* inflammation, as distinguished from *acute*, he does not so much imply a difference in the intrinsic nature of the morbid phenomena, as a limitation of the inflammatory action to certain distinct parts of the ovaries, as the ovarian follicle, and to portions of the ovarian tissue so small that they give rise to little swelling, and to no febrile action.”

After pointing out the predisposition of the ovaries to inflammation, resulting from their anatomical structure and their condition during ovulation, the author proceeds to describe the pathological anatomy of subacute ovaritis. He first notices the frequent occurrence of adhesions, false membranes or thickening, in that portion of the peritoneum covering the generative organs in the female; with loss of transparency, or a spotted or striated suffusion of the subjacent cellular tissues, caused by the infiltration of a thick opaque serosity, of a white, pink, or yellow colour, or their distension with a gelatinous fluid.

The condition of the ovary itself is thus described:—

It is “slightly increased in size, or double its usual dimensions, resisting and elastic; on pressure, it yields a sensation of fluctuation; its surface is smooth, polished, and glistening; its tissue more red than natural, though less resisting; congested with blood, as described by Negrier, or moist with a sero-viscous fluid.” “It is traversed by a number of smaller vessels, especially in the neighbourhood of the cells, which, placed at the surface of the organ, contain ova, and may be healthy or diseased.

“The vesicles have been found presenting *individually* evident signs of all the different stages of inflammation, although surrounded by a perfectly healthy stroma; the parietes of the vesicles have been found highly vascularized, so as to look like red currants, friable, lined with false membranes or full of well-formed pus; intimate but unerring testimonials of previous inflammation. The proof of their chronic inflammation has still more frequently been

observed. They may be hypertrophied, of the size of a pea or larger, round, or falciform, with an extremely dense white internal membrane, having a polished surface, of the thickness of parchment. They may also be found pellucid, having interposed between them and the parenchyma of the gland one or two other distinct membranous layers, with or without intermediate granular matter. They may contain either a green, yellow, or fatty liquid, or a pulpy substance, like the interior of an encephaloid cyst, or even solid saline concretions, as observed by Morgagni. The vesicles are sometimes found, on the contrary, atrophied and blighted; their liquid contents being partly absorbed, the follicles are no longer fully distended, but look like wrinkled sacs, of a white or grayish colour; and here we may observe that, however difficult it may be to understand, inflammation is known to cause sometimes hypertrophy of the ovaria, while, at other times, under the same mysterious influence, the ovaries of young women have been found as hardened and collapsed as those of women who have outlived the period of active ovarian life. These white bodies and cysts are never observed before menstruation; but they may be met with in every other stage of life, in virgins as well as in prostitutes. From the nature of these lesions, which are evidently inflammatory, we are able to infer the relative frequency of various stages of inflammation in one or more of the ovarian follicles."

"When subacute ovaritis occurs in the puerperal state, the ovaries are found greatly increased in size, their tissue becomes more friable, and infiltrated with yellowish or violet-coloured serum, sometimes resembling that of the spleen, but at other times it is more infiltrated with serum, slightly tinged with blood. In recording these lesions, and ascribing to them their due value, we must not, however, forget that the ovaries may be partially, and even seriously inflamed, without the power to perform their proper functions being permanently compromised."

"The liability of the Fallopian tubes to inflammation is proved by their often presenting undoubted traces of its having existed. This is not only the result of our own experience, but is confirmed by the testimony of those who, like Dr. Ashwell, Dr. R. Lee, and Professor Cruveilhier, have attended to lesions of the ovaries, and of their ducts; and Dr. Hooper, in the few pages prefacing his admirable delineations of uterine and ovarian disease, does not hesitate to say that the Fallopian tubes are frequently found to have suffered from inflammation! Their inflammation is almost always a consequence of ovaritis or metritis, and is confounded with these diseases exactly in the same way as Fallopian cysts are confounded with ovarian—a confusion of diseases which, as the same treatment is required in both cases, is indeed of but little consequence. As regards the morbid conditions which have been noticed, the fimbriæ may be found preternaturally florid, highly vascular, filled with blood, attached by recent false membranes to the ovaries or adjacent organs, or bound down to the same by firm, thick bands of long standing. The fimbriæ of both Fallopian tubes may be found destroyed, but in general those only of one or the other are seen to be totally so.

"This is a lesion of very frequent occurrence (Dr. Hooper), and with it generally coincides the obliteration of that extremity of the tube by which it communicates with the peritoneal cavity. The oviducts then terminate in a cul-de-sac; they are also increased in size, and are mostly tortuous, or of a pyriform shape, and their sides are thicker than usual, and fluctuating when pressed. On being opened, they are found to contain a serous, albuminous, puriform, or bloody fluid, and their internal surface is covered with tenacious or flocculent albuminous substance, the removal of which exposes tissues which are inflamed and softened. We may here observe that, however frequently obliterations of the Fallopian tubes may have been found, their imperforation, whether congenital or accidental, has been very seldom met with. A web of false membranes has been often discovered lining the interior of the oviducts of prostitutes, and of those women who have recovered from puerperal metro-peritonitis; whereas the same tubes are often found full of mucus, or even pus, in those who have died in the acute stage of the disease."

"In some cases, the oviducts may be perfectly healthy, and still unable to perform their allotted task, owing to the existence of false membranes, by which they may be glued to the neighbouring viscera, so as to preclude the possibility of their precise adaptation to the ovaries. Varying in density from that of the finest diaphanous film to that of strong ligamentous bands, these false membranes are of very frequent occurrence; and, in prostitutes, the ovaries and Fallopian tubes are seldom found without some one or other of the lesions already described, if we may rely on the testimony of Walker, Renaudin, and Dr. Oldham."

In regard to the causes of subacute ovaritis—Dr. Tilt refers to the nature and functions of the genital organs as the principal circumstances which predispose to the disease. The periodical congestion of the ovaries predisposes them, when from any cause this congestion is carried to a greater degree than ordinary, or is protracted beyond the usual time, to an attack of inflammation. In many of the published cases of ovaritis, we find, accordingly, that the disease came on at the time and instead of the menstrual discharge. It is more particularly liable to occur in women who are nervous, irritable, hysterical, and of a scrofulous habit. Dr. T. has not been able to verify the remark of Retzius, that women of a certain age, who have borne children, but have not suckled, are often attacked with ovaritis. Excess in sexual indulgence is not unfrequently a cause of subacute ovaritis in newly married women; but the disease is more especially the sequel of inordinate sexual intercourse in prostitutes. Walter and Renaudin state, as the result of their experience, that the ovaries of prostitutes are seldom without some morbid lesions, an assertion recently confirmed by Dr. Oldham.

"The privation of sexual stimulus is no doubt a cause of certain forms of subacute ovaritis; whether we consider its absolute privation in healthy women, whose feelings and passions are strong, or its sudden denial to those accustomed to its indulgence, as in young widows, whom Hildenbrand considers to be often attacked with this complaint, or as in prostitutes when placed in confinement. In such cases, the cerebro-spinal sympathies are called into active play, and hysteria masks its local cause. Marriage late in life is sometimes of itself a sufficient cause of subacute ovaritis. It seems as if the ovaria, having been debarred their proper stimulus when most needed, become so accustomed to the privation, that when the stimulus is at last presented to them it produces a morbid impression. Subacute ovaritis is also one of the pathological elements of that state, truly described as the critical time in the life of woman, and then, in most cases, it reacts on the uterus so as to produce those sudden floodings which so often terminate menstruation. If this be not the case, the periodical congestion, which has lasted for so many years, does not at once subside; it still exists long after the menstrual flow has ceased; and as this ovarian congestion is not relieved by its accustomed discharge, the ovaries are liable to inflammation, if such a result be not carefully warded off by repeated purgatives and judicious bleeding, according to the practice of our medical forefathers; a practice, perhaps, too much neglected in our own day."

Among the other causes of ovaritis, Dr. T. enumerates all those habits of life, and artificial excitements, which tend to exaggerate the impulse of unsatisfied desires; the disease in such cases being sometimes characterized by the development of hysteria. Nonat has twice seen acute ovaritis in the virgin.

The left ovary seems more liable to inflammation than the right; in seventeen cases, Dr. T. found the right ovary affected in only five. Roux has pointed out the congenital shortness of the vagina as being not an unfrequent cause of ovarian and uterine inflammation in those who are placed under matrimonial influences.

Among the exciting causes, Dr. T. enumerates falls on the feet, knees, or sacrum; violent jolting on horseback or in riding immediately after menstruation; the necessity for instrumental aid in parturition; disproportion between the child's head and the pelvis of the mother. A first confinement is a most important cause; in 25 out of Mr. Bell's 45 cases of pelvic tumours, and in 15 out of Mr. Taylor's 32 cases, they occurred in primiparæ. A very rapid delivery, and the tearing away of the placenta, have also appeared to bring on ovaritis. Styptic and stimulating injections into the cavity of the womb act also as an exciting cause. Retention of the menses, either from congenital occlusions of the vagina or uterine aperture, or accidentally induced by the blocking up the passage of the vagina from the pressure of tumours, or by the obliteration of the os uteri after parturition, or from the imprudent cauterization of its internal surface, or its closure, resulting from inflammatory tumefaction, or spasmodic contraction of the cervix—the two latter being a common result of cold externally applied, or cold drinks or ices imprudently taken into the stomach. Venesection, drastic purgatives, emetics, sexual intercourse, fever, mental perturbation or excitements, immediately before the occurrence of menstruation, are liable to cause the suppression of this discharge, and to induce subacute ovaritis, accompanied by dysmenorrhœa, or hysterical symptoms. When from any of these causes the menses are suddenly arrested during their flow, the subacute ovaritis they may produce is attended by engorgement of the uterus.

"The retention or suppression of the menses has, according to Dr. T., a twofold influence in the production of ovaritis, and it may be added, disease of the pelvic organs in general—first, by the retention of what was to have been excreted, and the consequent congestion of the organs which secrete the menstrual discharge; secondly, by the arrest of the ovarian discharge and the subsequent oppression of the system by some reflected influence of a nervous kind."

Catarrhal disease, and extensive ulceration of the neck of the womb, are also enumerated as causes of subacute ovaritis. The disease is likewise often an attendant upon metritis: sometimes the two coexist, and then the former is masked by the symptoms of the latter.

"M. Gendrin, whose name carries weight in such matters," Dr. T. remarks, "states that he has often seen cases of ovaritis and uterine engorgement, and metro-peritonitis, caused by deep cauterization, and in some instances even by the use of the nitrate of silver to the neck of the womb, or by styptic injections. But we have not only to fear the propagation of inflammation on account of the idiosyncrasy of the patient, or from the injudicious use of active escharotics, but likewise from the employment of various mechanical means which have lately been invented, and are now so much in vogue. The ordinary pessaries effect no good purpose, while they give rise to great irritation, and are as irrational as they are disgusting.

"We agree with Dr. Hervez de Chegoin that sometimes retroversion of the womb, by its pressure on the ovaries, may greatly irritate them; but we think Dr. Rigby has exaggerated the importance of this cause of ovaritis, and that in many cases the use of the stem pessary, without curing the retroversion, prolongs ovarian and uterine irritation. We have so often seen this to be the case that, without denying the good results which may have followed the use of the stem pessary in more skilful hands, we do not intend again to employ it. And when we remember that many of the uterine deviations and reflexions are *congenital*, as Mr. Jobert de Lamballe has well proved, and therefore beyond the pale of treatment, or else of so long a standing that they cannot be permanently *redressed*; and that in the majority of cases they are perfectly *harmless*—a fact which has been lately brought into the strongest relief by Professor Paul

Dubois, Hervez de Chegoin, and been received without contradiction in the important discussion on uterine disease now proceeding in the Académie Nationale de Médecine—finally, when we consider the mischievous effects often entailed by the employment of the stem pessary, and the fatal result it determined in the case reported by Mr. Bransby Cooper; we think our resolution is well founded, and, using the words of an anonymous writer, we are tempted to say ‘that it is scarcely consistent with right principle to seek a doubtful good by means which have been proved to be fatally dangerous even in well-skilled hands.’”

As specific causes of ovaritis, Dr. T. enumerates the puerperal state, the rheumatic diathesis, and blennorrhagic infection.

The symptoms of ovaritis are, a dull pain in the ovarian region, brought on by walking, riding, or any sudden movement, or even by pressure on the side. The pain is increased in the erect posture; it extends across the loins and towards the thighs and fundament; it is then of a dull, dragging, heavy, and sometimes of an overwhelming nature. It is, however, seldom so acute as to induce the patient to seek for advice. If the patient is married, connection awakens and renders the pain more or less acute. The hands placed on the iliac regions can sometimes detect an increase of heat. Twice, Dr. T. has seen swelling of the left side coinciding with pain and swelling of the left ovary. There is frequently tenesmus, a desire of passing water, or an inability to do so, or bearing-down pains and impossibility to pass the fæces. In these cases, by a vaginal exploration, an increase of heat in the upper portion of the passage may be discovered.

“But, we are told, unless the ovaries are considerably swollen, their increase of dimensions will not be detected by this mode of investigation. It may, however, afford an indirect intimation of diseased ovarian action: thus, if one of the ovaries be inflamed, the patient’s sufferings are greatly increased by forcibly inclining the neck of the uterus towards it, so as to direct the fundus uteri to the opposite side. The exasperation of the patient’s sufferings is then caused by the stretching of the inflamed broad ligament. If both ovaries are inflamed, slight lateral movements, communicated to the uterus by its neck, will greatly increase the pain felt in the ovarian regions. More direct evidence may, however, be obtained by a rectal exploration, for then the finger reaches the ovaries, and finds them more or less painful on pressure, which is not the case when these organs are in their healthy state. They are found to vary from twice to four times their original size.

“The most painful sufferings are produced by the descent of the ovarian swelling, of about the size of a small apple, into the recto-vaginal cul-de-sac, thus impeding defecation, or bearing down the uterus, so as to produce its complete retroversion. Such cases have been noted by Boivin, Denman, M’Intosh, and Dr. Rigby.

“General symptoms are sometimes absent, but in the more acute cases the local signs of inflammation are accompanied by slight fever at night, thirst, and a furred tongue, nausea, and sickness.”

The description of the symptoms of the puerperal variety of subacute ovaritis Dr. Tilt quotes from the paper of Dr. Doherty. After perhaps an easy labour, and when convalescence has proceeded uninterruptedly for some days or even weeks, the female, after being exposed to the influence of cold, is seized with shivering, succeeded by hot skin, quick pulse, and a dull weight about the pelvis. The febrile symptoms disappear after a few hours, and the uneasy sensation about the lower part of the abdomen is insufficient to excite any apprehension in the mind of the patient, and thus a considerable space of time may pass over. Febrile paroxysms, however, recur at intervals, and, finally, becoming more frequent, while stiffness and pain are felt on moving the leg of the affected side, advice is again applied for.

“By a careful examination,” remarks Dr. T., “the local disorders already described will be detected; but the ovarian congestion will be more considerable than in the idiopathic variety, and will be accompanied by considerable sero-purulent infiltration of the adjoining cellular tissue, and even of the vagina, which gives to the finger the sensation of a dense brawny substance, particularly in its anterior curve.”

The author next proceeds to consider the different accessory symptoms, by which, in different women, subacute ovaritis may be attended, according as the inflamed ovaries react on a womb more or less excitable, on a nervous system differently prone to respond to irritation, or on fluids, more or less, or differently, vitiated by the unknown cause of scrofula, &c. This is done under the heads of the amenorrhœal, dysmenorrhœal, menorrhagic, and hysterical types of ovaritis.

We cannot follow the author in his interesting remarks in reference to each of these forms of the disease. Though concise, they are appropriate and highly plausible. The views advanced by him cast a new, and, we believe, a very important light upon the pathology of many of the diseases of the sexual organs in the female.

It can scarcely be doubted that ovaritis, particularly in its subacute form, is of more frequent occurrence than is generally suspected; that to it are to be referred, in numerous instances, the derangements of the menstrual function, is susceptible, we think, of very strong proof, derived as well from the received views of the physiological functions of the ovaries as from facts based upon an analysis of the history and symptoms of the cases in which the menstrual flux is deficient, painful, or in excess, and from the lesions discovered in the ovaries after death. Much of the uneasy sensations and sufferings in females which are attributed to disease of the womb, and which are, in vain, attempted to be relieved by remedial measures directed solely to that organ, are unquestionably the results of ovarian inflammation, and are to be removed only by means calculated to cure the latter. Dr. T. deserves the thanks of the profession for directing its attention, by the preparation of the work before us, to the importance of ovarian pathology and the necessity of its more complete investigation.

As terminations of subacute ovaritis, are enumerated 1st, sterility—which it produces, according to our author, by accelerating the shedding of imperfectly developed ova; or by causing the retention of blighted ova, in consequence of their transmission from the ovaries to the uterus being impeded by a blocking up of the Fallopian tubes with mucus; 2dly, uterine inflammation.

“The powerful influence of subacute ovaritis as a great cause of congestion and hardening of the womb has been shown by Drs. Oldham and Rigby. Under this influence,” remarks Dr. T., “the uterine surface secretes membranes which, when compared with those cast off in cases of abortion, are found identical; but this is not all, for the texture of the womb becomes altered. In recent congestion, the posterior wall feels soft, compressible, and painful to the touch; but, after repeated engorgements, the tissue becomes harder, more solid, very much like the tissue of an *erectile* tumour, or that of a fibrous growth. Thus enlarged, the womb becomes liable to retroversion, and sometimes even, when the womb is thus displaced, it excites inflammation in the neighbouring peritoneum; false membranes are then formed which fix the womb, and an irreducible retroversion is the result.

“That ovarian irritation may determine the engorgement of the neck of the womb is proved by a case lately published by Professor Récamier (*Gaz. des Hôpitaux*, Feb. 22, 1850).”

In proceeding to lay down the treatment proper in cases of subacute ovaritis, Dr. T. cautions against any attempt to remove the disease by active remedies administered during the exacerbation produced by menstruation. The time for their administration is during the intervals between successive epochs. Leeches are recommended over the ovarian region, as much as possible at the seat of pain. They should be sufficient in number to make a decided effect on the local inflammation, and should be followed immediately by hot poultices or fomentations. The number and repetition of the leeches must be left to the discretion of the medical attendant. Dr. T. objects to the application of leeches to the os uteri or to that portion of the rectum which covers the ovaries.

Purgatives are useful both to counteract all tendency to inflammation and to remove from the vicinity of the ovaria any causes of mechanical irritation, as retained fæces, morbid intestinal secretions, &c. The saline and oleaginous articles are preferred; irritating and drastic purgatives are counter-indicated, excepting in certain cases of the amenorrhœal type.

Enemata composed of 15 ounces of aqua camphora, of 6 drachms of aqua lauri cerasi, with sometimes the addition of 3 drachms of the tinctura hyoseyami, Dr. T. considers as most valuable addenda to the preceding remedial measures. He sometimes substitutes the tincture of belladonna or of opium for that of hyoseyamus.

"With respect to this administration of injections," says Dr. T., "the bowels having been previously opened, or else an injection of water having been made, four or five ounces of the tepid enema should be injected slowly into the rectum, the patient being told to retain it as long as possible, and lying on her back, so that the pelvis may be somewhat higher than the rest of the body. This injection should be repeated three or four times a day; and when we consider that the liquid injected is separated from the inflamed ovaries only by a thin elastic and highly absorbent membrane, it will not be difficult to understand that enemata, thus carefully given, are productive of the greatest advantage. When the patient is cured, the medicated enemata should be discontinued, and replaced by cold water, to be likewise injected into the rectum morning and night. By cold water, we mean that which has stood in an inhabited room, and which, when introduced, gives an impression of cold, without chilling the patient. We do not know of any means better calculated to reduce the exaggerated ovarian irritation; and, while treating of this subject, we may remark on the powerful effect of cold water enemata in arresting a tendency to hysterical seizures, and in suddenly removing them where they already exist."

"Vaginal injections are also useful. We agree with Cullerier, sen., and with Lisfranc, in ascribing no great utility to narcotic vaginal injections, which rather irritate the tissues than subdue their inflammation. They are, however, useful in the hysterical type, as stated by Brière de Boismont."

When the leech bites are healed, Dr. T. directs blisters, of four or five inches in length by three in breadth, and carefully camphorated to prevent dysuria, to be applied over the ovarian regions. The epidermis is not to be removed, and the irritated surface should be healed as soon as possible. The antimonial ointment, as recommended by Dr. Rigby, is also beneficial when applied over the same region.

Mercurial frictions have been recommended by M. Boivin in cases attended with inflammatory adhesions of the broad ligaments, dysmenorrhœa, pains, constipation, and tendency to abortion. Dr. Granville has also cured the tendency to miscarriage resulting from ovarian irritation, by combining the internal use of castor oil with mercurial frictions. Dr. T. has derived increased benefit from mercurial frictions by combining with the ointment extract of hyoseyamus, belladonna, and opium, in the proportion of a drachm of the ex-

tracts to an ounce of the ointment. He is also in the habit of combining camphor with the mercurial ointment.

While Dr. T. objects to the inunction of iodine ointment to the roof of the vagina, as practiced by Dr. Kennedy, he states that he has sometimes derived advantage from the medicated pessaries recommended by Dr. Simpson. The following formula may be employed: Extract of belladonna, 2 drachms; camphor, 10 grains; yellow wax, $1\frac{1}{2}$ drachm; lard, 6 drachms,—or strong mercurial ointment, 2 drachms; extract of belladonna, 1 drachm; yellow wax, 2 drachms; lard, an ounce. In some cases, iodide of potassium 1 drachm, or acetate of lead 2 drachms, for each pessary, may be found beneficial.

In cases occurring in females of a nervoso-sanguine temperament, baths of water sufficiently warm not to chill the patient are a useful remedy. The proper temperature of the bath should be maintained by the constant renewal of the warm water, so that the patient may remain immersed for at least an hour.

It is important that, at first, the patient be confined strictly to a horizontal position, and subsequently for two or three hours in the middle of the day.

"It is necessary to say that the general treatment of the patient should be such as will invigorate the constitution, without increasing the local irritation, and the determination of blood to the pelvic organs. The protection of the feet from damp is of course a point of great importance; but what is of still more consequence, in a fitful climate, is effectually to protect the pelvic organs by drawers."

If the patient be married, sexual indulgence must be abstained from so long as there are any signs of ovarian inflammation, and afterwards permitted only in moderation.

In the puerperal variety of subacute ovaritis, the above treatment should be enforced with greater care, on account of the liability of the patient to more serious local disorder. Dr. T. does not approve of the recommendation to remove the child from the breast. Keeping up the action of the mammary glands he believes to be preferable to its arrest.

We pass over the short but pertinent remarks of our author in relation to the treatment of the amenorrhœal, dysmenorrhœal, menorrhagic, and hysteric types of subacute ovaritis. In speaking of sterility resulting from obstruction of the Fallopian tubes by mucus, Dr. T. condemns the proposition that has been made by Dr. Tyler Smith for deobstructing these tubes by an instrument to be passed into them at their openings into the uterus and carried onwards to their fimbriated extremities.

Acute ovaritis Dr. T. defines as follows:—

"Considerable swelling of the ovaria, and the surrounding cellular tissue, with formation of pus, its elimination or absorption."

"If the inflammatory process has been sufficiently intense, or has not been actively treated, the ovaria in the course of a few days swell to a considerable bulk," "and contain pus, either infiltrated in the tissue of the organ, or disseminated in its various parts. These purulent deposits scattered through the ovaries have been described by Negrier, and considered as inflamed Graafian cells, filled with pus of their own secreting." "These small cavities may communicate, or the central part of the ovary may be broken down, nothing being left but the ovarian shell filled with pus." "These collections of pus, if not artificially opened, have a tendency to empty themselves into the neighbouring organs, when they will be found to communicate, by fistulous passages, with various parts of the intestinal canal, with the bladder, or with the vagina, or to open into the peritoneal cavity. T. Bonnet, Shenkius, Merat, and Dr. Seymour have related cases wherein the ovaries were found to be in a state of

gangrene. We must remark that, in these acute cases of inflammation, the adjacent cellular tissue is also inflamed, and that this adds considerably to the size of the tumour, and to the extent of its suppuration; indeed, some authors think that pelvic tumours originate principally in the pelvic cellular tissue. The ovarian peritoneum is also implicated in the general inflammation. It is covered with false membranes, causing it to adhere to the neighbouring organs; and these adhesions, if the patient survive, are transformed into those solid bands which interfere with the play of the pelvic viscera, and frequently cause abortion.

"The coincidence of abscesses in the ovary and the corresponding oviduct was noticed by Morgagni, and afterwards by Andral, Dalmas, and Haaze." "Cruveilhier found both the ovary and the corresponding Fallopian tube distended with pus, the tube being adherent, and the ovary so softened in the vicinity of the adhesion that it would soon have allowed its contents to pass through the tube to the uterus."

"Pus may be found in the ovarian veins, though not so frequently as in the uterine. Cruveilhier considers the lymphatics to be more commonly distended with the pus they have absorbed." "These vessels have been sometimes mistaken for veins; but, when the pus is removed from the lymphatics, those structures appear perfectly healthy; whereas, when the veins are inflamed, their tissues are thickened, have become more fragile, and are lined with false membranes.

"The size of the tumour is often more considerable, and the stroma loses all trace of organization, being more or less changed into a milky, sero-purulent magma, or into a grayish sanious matter, or a vascular pulp, which is almost diffuent, and approaches very nearly to the condition of gangrenous decomposition, since it indicates the total disorganization of the ovarian tissue. In some cases of puerperal metro-peritonitis, Cruveilhier, Boivin, Dugès, Seymour, and Dr. R. Lee have found, on post-mortem examination, the different ovaries ruptured, without it being possible to ascribe the rupture to any violent traction; and the shreds of the organ, being mingled with pus and peritoneal effusion, have, no doubt, been described as the result of gangrene by the older authors."

"Another important pathological distinction between puerperal and idiopathic ovaritis is that in the latter the adjacent peritoneum is frequently not inflamed, and may for years form an efficacious boundary to ovarian disorders; but in the puerperal variety, as might have been presupposed, the ovarian peritoneum soon participates in, and often even originates, the disease."

Acute ovaritis is produced by the same causes as the subacute form, acting with more intensity or continuity, or on a constitution more susceptible to their influence.

The symptoms of acute ovaritis are pain increased by all movements of the body, but especially, by extension of the limb of the side affected. The pain is sometimes most acute. In a case mentioned by Dr. Ashwell, it was so intense that syncope was induced by the patient rising in bed to pass her urine. The pain may be either heavy and dragging, pulsating, or accompanied by a feeling as if a foreign body were boring its way through the vulva. If the ovarian region be examined, we can often see a tumour distinctly pointing from the side of the pelvis. There is an increase in the natural heat of the surface, of which the patient is herself frequently aware. Pressure increases the pain, and the extent of the tumour may, in some cases, be more or less distinctly felt; a sense of uneasiness or numbness in the limb on the same side as the tumour may also be present.

By a vaginal exploration, this passage will be found hotter than usual, dry, and not lubricated by mucus. The upper curve will sometimes be infiltrated, giving to the finger the sensation imparted by brawn.

"When the tumour is small, it generally subsides between the uterus and the rectum, or between the former organ and the bladder, and, in some rare cases,

not only presses on these organs, but actually forces down the fundus uteri, causing prolapsus of the viscus. In a case recorded by Mr. Jackson, the tumour was situated behind the rectum, which was consequently pushed forwards. If the tumour develop itself behind the uterus, it may press it against and above the pubis, thus producing, by its continued pressure, abnormal deviations, and atrophy of the womb; when the tumour has increased, and is no longer entirely in the vicinity of the vagina, having ascended towards the brim of the pelvis, valuable information respecting its position and nature may still be afforded by the finger, even though it cannot reach the seat of the disease. Thus, the tumour may depress the uterus to the right or to the left, or may flatten it against the pubis, causing its complete retroversion, and also rendering it impossible for the finger to attain the os uteri." "This cannot take place without elongating the vagina and urethra, altering their form and direction, and interfering with their functions; copulation may be impossible, the egress of the menstrual flux difficult; and, in a case related by Dugès, the pressure of a large tumour was such as to cause the total obliteration of the vagina. For similar reasons, micturition may be greatly impeded, and there are patients who can only pass water on reclining the body as much backward as possible. In some cases (Boivin, Laugier), it is necessary to depress the tumour, in order to pass the catheter; in others, a male catheter only can be made to penetrate into the bladder; and there are also cases where it is impossible to introduce this instrument at all. Sometimes we can only just feel the inferior segment of the uterus, and then we find that its usual mobility has been checked, or that it is bound down by the thickening and infiltration of the adjacent inflamed tissues, and thus rendered immovable in the pelvis.

"If the tumour has been allowed to increase, and if it has contracted adhesions with the uterus, it will, on rising above the brim of the pelvis, draw the uterus after it. In such cases, which are not of frequent occurrence, the impossibility of feeling the neck of the womb is easily explained."

Dr. T. remarks that, by a rectal examination, the conclusions of the previous inquiry will be confirmed, and thus, by the double touch, we have the means of establishing an accurate diagnosis of these often difficult cases.

"In the commencement of acute ovaritis, the dysuria is only sympathetic; but when the tumour has increased in size, should it fall between the bladder and the uterus, it may, as in the incipient stage of ovarian cysts, give rise to a most painful symptom, viz: the desire of passing water every minute. If the ovarian tumour becomes still larger, and occupies the pelvic cavity, the bladder will be diminished in size, and its fundus is generally pushed forward and above the pubes, when the catheter will not pass freely through the elongated urethra. After this explanation, it will not be difficult to understand, that the sudden suppression of the jet of urine when the patient bends forward, and its free flow when she throws herself backward, are indications of a pelvic tumour."

If the urine contain pus, it will throw some light on the case.

"In the early stages of idiopathic ovaritis, nausea, sickness, and sometimes constipation, are frequent accompaniments, depending, at first, on the irritation of the visceral peritoneum, and the temporary paralysis of the muscular coat of the intestines. When, however, the tumour has increased, and rests on the rectum, the patient is troubled by a more constant constipation, and by tenesmus. The pressure on the rectum is sometimes so great that the fæces are moulded into the form of a riband. If the tumour increases still more, it rises above the brim of the pelvis, and then the lower intestine is no longer compressed to the same degree. It is incumbent on the medical attendant to examine the fæces, as, by the appearance they may present, and the pus they may contain, important elements of diagnosis may be obtained."

"The general symptoms of acute ovaritis are, in the first stage of the complaint, similar to those which announce the process of suppuration in any deeply seated organ, such as shiverings, followed by fever of a remittent or continued

type, particularly when the symptoms of ovaritis merge into the more marked phenomena of acute peritonitis. In the worst cases, abundant perspirations, violent thirst, disordered stomach, delirium, coma, and complete insensibility to all pain, close the scene. Frequently, however, the patient amends, and the ovarian swelling diminishes; but, on account of the periodical turgescence of the ovaries, relapses occur; or else the inflammatory type lowers, and chronic ovaritis, or what we have called subacute ovaritis, is established."

It may then last for years, giving rise to menstrual derangements, or to leucorrhœa, consequent on the permanent congestion of the whole generative system.

Tubal inflammation is not to be distinguished by any peculiar symptoms from acute ovaritis.

The symptoms of the *puerperal* form of ovaritis are nearly the same as those already described. There is sometimes diminution or suppression of the lochial discharge; at other times, the lochial discharge, as well as the flow of milk, continues for several days after the appearance of fever. The pain is less intense, but there is a greater amount of swelling and of peritoneal inflammation, by the extension of which all the symptoms of puerperal fever are developed, and the local disease is, in this manner, effectually masked.

Blennorrhagic ovaritis is of rare occurrence. It is produced by the extension of inflammation by the Fallopian tubes, or by the direct application, through these tubes, of the blennorrhagic pus to the ovaries.

Rheumatic ovaritis is also of very rare occurrence. It is said to occur during the last months of gestation, during labour, and in the puerperal state, in consequence of the action of cold air on the excessively expanded, and often unprotected, parietes of the abdomen. In addition to the usual symptoms of the disease, it is sometimes attended by violent paroxysms of pain, and profuse perspirations.

Acute ovaritis may be confounded with metritis. This error is the more liable to occur from the fact that the one disease is often the result of the other. In metritis, however, there are more fever and sickness, and the tumour can generally be detected above the pubis. The pain is more constant, lancinating, and circumscribed, than in ovaritis. From puerperal hypertrophy of the womb, the diagnosis of acute ovaritis is still more difficult. It may be confounded also with cæco-iliac abscess; with feculent accumulations in the cæcum and sigmoid flexure of the colon; with simple abscess of the pelvic walls. The disease of the ovaries may also be obscured by the occurrence of inflammation of the fossa iliaca, or phlegmasia dolens. The diagnosis is to be made out by a careful attention to the history of the case, and manual examination by the vagina, rectum, and the double touch.

Acute ovaritis may terminate by resolution, or by elimination, when the abscess may open externally, generally in one of the iliac regions; or it may open in the vagina, in the intestines, in the bladder, or into the peritoneum, giving rise to peritoneal inflammation.

The treatment of acute ovaritis, as laid down by Dr. T., differs, at the outset of the disease, but little from that directed in the subacute form; though it will be necessary to carry out some of the curative measures with greater energy. From fifteen to twenty leeches are to be applied over the seat of the disease, and repeated, if necessary, after a short interval. When the bleeding from the leech bites has ceased, Dr. T. directs the ovarian region to be anointed with two drachms of the compound mercurial ointment, covering immediately the part anointed with a large linseed poultice. At the same time, he administers internally two or three grains of calomel, with or without the tenth of a grain of opium, every second or third hour. Blisters

in the early stage of the disease are inadmissible. Medicated clysters, as recommended in the subacute form, would be advantageous could they be administered without increasing, by the movement of the patient, her sufferings.

When there exists an inflammatory ovarian tumour with no manifest opening outwardly or inwardly, we may try the effects of the ointment recommended Jahn; 2 ounces of ung. hydrarg. combined with 3 drachms of potass. iodid. Dr. Rigby has used the tartar emetic ointment, rubbed into the inguinal regions, so as to produce sloughing. Horst gave, internally, sal. ammon. 1 ounce, tart. stib. 1 gr., decoct. taraxaci, 1 pint; a cupful every hour. Sadler applied a moxa over the ovarian tumour, and repeated it in five days after. Although cases are related in which each of these measures is said to have effected a resolution of the ovarian abscess, still we are to view this as a result of rare occurrence.

The most approved practice is for the surgeon, so soon as fluctuation becomes manifest, to open the ovarian abscesses at the place where they point, and whence, consequently, the pus can easily flow. By this procedure, the patient is immediately relieved from the pain arising from the inflammatory distension of the cavity, and from many other dangers, and she has a better chance of recovery.

The vaginal opening of the abscess—the most desirable; the rectal opening—which Dr. T. condemns; the opening through the parietes of the abdomen, are separately discussed, and the modes of procedure carefully described. For much valuable information on these important topics we must refer to the work itself. An analysis of the sections devoted to a consideration of the treatment of pelvic abscesses by incision would be useless, and we have already extended our quotations from the preceding chapters of the work to too great a length to permit us to present those sections entire.

Dr. T. concludes his treatise with the following practical deductions from his previous inquiries, as expressing truths in regard to diseases that are as frequent as they have been hitherto little understood.

“1. That amenorrhœa is often the result of subacute ovaritis, sometimes the result of the uterine engorgement which it determines.

“2. That dysmenorrhœa is often the result of morbid ovulation, and often a symptom of ovarian peritonitis. That frequently, subacute ovaritis, by determining the inflammatory swelling of the neck of the womb, is a mediate cause of dysmenorrhœa; the painful symptoms being, in many instances, produced by the partial closure of the neck of the womb, and the consequent effusion of menstrual secretion into the peritoneum.

“3. That, in many cases of menorrhagia, it is subacute ovaritis, which, by some unexplained process, disposes the engorged uterus to let the vital fluid run to waste.

“4. That subacute ovaritis, by inducing cerebro-spinal reflex action, in certain predisposed subjects, is the most probable cause of hysteria.”

We have endeavoured, as far as possible, to present to our readers, from the details furnished by Dr. Tilt, the history of the symptoms and pathological anatomy of the two more prominent forms of ovarian inflammation, in order that their attention may be directed to the further investigation of diseases of daily occurrence, that have heretofore too much escaped the attention of the practitioner. The inconvenience and sufferings to which these diseases give rise have been most commonly ascribed to a morbid condition of the womb, of the exact character of which few appear to have any very precise idea. The neglect with which the pathology of the ovaries has been heretofore treated appears to be, in some degree, owing to the fact that the inflammatory

conditions of these organs are often secondary to disease of the uterus, while in a still greater number of cases they give rise to affections of the latter organ, by the prominence and ready diagnosis of which the primary disease is in a measure masked. But the chief cause of our little acquaintance with ovarian disease—especially the subacute form of ovaritis—has been the utter neglect of manual exploration in its investigation. In our opinion, the work of Dr. T. is one calculated to do much good. By collecting, and arranging in a systematic form, the facts and observations in relation to the affections of which he treats, that are scattered through the records of our profession, he deserves our thanks. And by the additional observations he has furnished, and the views he has advanced—even although we may not be able to coincide in the correctness of all of them—he has unquestionably prepared the way for a more accurate acquaintance with ovarian pathology, and a more rational management of some of the most distressing and heretofore unmanageable of the diseases of the reproductive organs in the female.

D. F. C.

BIBLIOGRAPHICAL NOTICES.

ART. XIV.—*Surgical Anatomy*. By JOSEPH MACLISE, Surgeon. With colored plates. Part third. Philadelphia: Lea & Blanchard, 1850.

THE subscribers to this excellent work, and others interested in the study of surgical anatomy, will be pleased at the prompt republication of another number. It abounds in excellent drawings, as do its predecessors, and the commentary displays the same characteristics as those, viz., truthful descriptions simply unfolded.

The subject of hernia continues to occupy the author's attention in the present number, commencing where the preceding part closed, *i. e.*, with the fifth, sixth, seventh, and eighth layers of the inguinal region, and their connection with those of the thigh. The points which he chiefly dwells upon in the first chapter are, the true constitution of the cremaster muscle, and the formation of the inguinal canal.

"The dissection of the oblique or external and the direct or internal inguinal hernia" forms the subject of the author's comments on the 32d, 33d, and 34th plates. In this chapter, the grounds for the usually received nomenclature of the varieties of inguinal hernia are explained. From the relation of the protrusion to the epigastric vessels come its designations as "*internal*" and "*external*." The oblique direction of the inguinal canal gives to the hernia which traverses the latter the term "*oblique*;" this accident is also called "*indirect*," from the indirect route by which the bowel at length reaches the external ring; while the "*direct*" hernia forces its way through this opening, on the inner side of the epigastric artery, without previously passing the internal ring. Again, the hernia is said to be "*incomplete*" when it does not manifest itself externally, being still lodged in the canal; it is called "*complete*," on the contrary, when it presents itself as a tumour outside of the external ring, and "*scrotal*" when it has fairly descended into the scrotum. In commenting upon these forms of the same accident, Mr. MacLise points out distinctly the relative situations of the hernial mass, the epigastric vessels, and the spermatic cord—questions of great practical importance, as every one knows—and explains how the accident occurs more frequently in the male than in the female.

In connection with plates 35, 36, 37, and 38 is a chapter on the distinctive diagnosis between external and internal inguinal hernia, the taxis, the seat of stricture, and the operation. The author's observations on each of these points are interesting and sensible.

It is important, on many accounts, and a source of self-satisfaction, that the surgeon shall be able to distinguish the particular variety of inguinal hernia with which he has to contend, whether it be necessary to use the knife or not. And yet the characteristics of the different forms of inguinal hernia are more or less interchangeable, so that the term direct or oblique may not strictly apply to a particular case. "The nearer the one approaches the usual place of the other, the more likely are they to be mistaken the one for the other. An *internal* hernia may enter the inguinal canal and become oblique, while an *external* hernia, though occupying the canal, may become direct." Moreover, both forms of inguinal hernia may coexist at the same time and on the same side. And, again, a plurality of the same kind of hernia is sometimes met with upon one side. Sir Astley Cooper mentions such instances. In such cases as these, in which the ordinary condition of things is more or less widely departed from, the surgeon must mainly depend for a true diagnosis upon the relative situa-

tion of the spermatic cord and the testicle, and the epigastric artery to the hernial tumour. Mr. Maclise's remarks concerning such a difficulty may be consulted with advantage.

With reference to the seat of the stricture in inguinal hernia, his comments are quite full. In the case of an *external* inguinal protrusion, the difficulty may exist, he says, at the internal ring corresponding to the neck of the sac, or at the external ring. At these points, the stricture, though firm, is of a passive character, inasmuch as these apertures are devoid of any capability of exerting an active force upon the bowel; but between these points "the lower parts of the transversalis and internal oblique muscles embrace the herniary sac, and are known at times to be the cause of its active strangulation or spasm." The seat of stricture of an *internal* hernia may be either at the neck of its sac or at the external ring; but the nature of the strangulation will vary, he says, according to the locality at which the bowel enters the inguinal wall, whether it pass through a cleft in the conjoined tendon, or on the outer margin of this tendon, or close to the epigastric artery. When the stricture, in either variety of hernia, is at the neck of the sac, the cause of the strangulation does not originate in the sac itself, but is due to forces resident in the structures about the sac, *e. g.*, to pressure, or other sources of irritation, which may compress the walls of the sac, or, by occasioning inflammation and consequent plastic effusion, diminish its capacity at the expense of the bowel, and produce adhesion between the two.

Respecting the direction in which the incision should be made through the stricture when this is at the neck of the sac, Mr. Maclise maintains, after acknowledging Sir A. Cooper's suggestion that the incision be made directly upwards, "that an incision carried *obliquely upwards* towards the umbilicus would be much more likely to avoid the epigastric artery through all its varying relations."

The next chapter is entitled "Demonstrations of the nature of congenital and infantile inguinal hernia, and of hydrocele." The commentary is illustrated by nine drawings. It forms an essential part of the subject of hernia. Commencing with the original situation of the testicle just below the kidney, and tracing it down into the scrotum, the author shows, from anatomical considerations, how the descent of the bowel is possible or probable, or even unavoidable; how such an accident is guarded against by nature, and, if it should occur, the different forms which it may assume. Hydrocele is also treated of in the same manner. In both affections, the surgical anatomy of the parts concerned is very clearly described.

Following this, we have a number of very neat drawings, exhibiting "the origin and progress of inguinal hernia in general," forming with the commentary an exposition of the mode in which protrusion of the bowel takes place, not only in the most ordinary forms, but in those which are unusual, and which, consequently, are apt to be least understood. Amongst the variations referred to are those instances in which the peritoneum, closing the internal ring, is sometimes ruptured by the descending bowel, sometimes merely pouched before it; in which the serous canal, immediately enclosing the spermatic cord, or the round ligament, remains pervious, thus admitting the gut to enter and traverse it through the whole or a part of its length, constituting "the congenital inguinal hernia;" in which a sort of subsidiary serous spermatic tube exists, "the canal of Nuck," being, as it were, a duplicature of the true serous investment of the cord, and receiving into its open mouth the descending bowel; in which the proper serous tube is closed only at the internal ring, and is afterwards dilated by a hernia which descends and pushes before it a pouch of peritoneum, thus furnishing the bowel with a double serous investment, in which the inguinal canal and cord become multicapsular. In connection with these peculiarities, there must of course be corresponding modifications in the anatomical condition of the parts which are of importance to the operator. These departures are commented upon by Mr. Maclise in a very happy manner.

The subject of inguinal hernia having been thus thoroughly discussed, the author next devotes particular attention to femoral hernia. The first chapter on this topic is entitled "the dissection of femoral hernia, and the seat of stric-

ture." He advances no novelty; but the description which he gives seems to us to be as clear and succinct as it can be made. All confusion and unnecessary multiplication of terms are avoided; and the accompanying drawings are very beautifully executed, and constitute really illustrations of the text and of nature.

But, in order to exhibit more fully, and from many points of view, the subject in question, we are favoured with another chapter, which unfolds the mode of origin and progress of femoral hernia, together with its diagnosis, the taxis, and the operation.

In concluding our cursory notice of the contents of the third part of Mr. Maclise's work, we must again express our satisfaction at the manner in which the author has treated the subject of hernia. His commentary is simple and to the point, and the drawings with which he illustrates nature are exceedingly well designed for his purpose, and many of them are, if we are not mistaken, original with the author.

F. W. S.

ART. XV.—*A Treatise on the Pathology, Diagnosis, and Treatment of Neuroma.*

By ROBERT W. SMITH, M. D., T. C. D., M. R. I. A. Folio, pp. 30, with plates. Dublin: Hodges and Smith, 1849.

THE pathology of the nervous system is probably more difficult of investigation, as well as less understood, than that of any other branch of special pathology; yet it is not, surely, one of the least important. It is therefore a subject of congratulation, among all who are at all interested in this study, that Mr. Smith has directed his attention to it, since they have a right to entertain the most confident hopes that the patient and well-conducted observations, with the integrity of purpose and of judgment, which have thrown so much light upon other subjects of surgical inquiry, will also elucidate this.

In the British medical journals, and in the reports of the transactions of medical societies in Great Britain, records of cases of neuroma may be found, and valuable essays upon this subject; but we believe that this volume of Mr. Smith is the only monograph on this singular affection in our language. The German and French, however, have been more prolific. Mr. Smith's book is the result of his own personal investigations of cases of the disease, and of a careful examination of the contributions of others, of which he gives an elaborate enumeration.

The term *Neuroma* seems to have been introduced into medical nomenclature by M. Odier, of Geneva, in the year 1803, and signifies a tumour connected with a nerve. In his discussion of the subject, Mr. Smith arranges neuromatous tumours in two classes: first, those which are idiopathic; and, secondly, those which are the result of wounds or other injuries of nerves. "Among the latter, may be included the tumours which form upon the extremities of nerves divided in amputations. In the *idiopathic* variety of the disease, there is, in general, but a single tumour, which, whether it be solid or composed of a cyst filled with fluid, is usually painful; but, when several such tumours exist, either upon the same or upon different nerves, they are, in most instances, solid, and free from pain. The *traumatic* varieties of neuroma, whether solid or fluid, are, in almost all cases, the source of severe suffering."

The general characters and symptoms of neuroma, of both varieties, are detailed at considerable length. The *idiopathic* neuromata are described as oval or oblong in shape, having their long axis in the direction of the nerve to which they are connected. In size, they vary from that of a pin's head to that of a melon, or even larger than this. There may be either one or many on the same nervous trunk; and they sometimes exist simultaneously on all the spinal nerves. They are rarely met with in the ganglionic system. "They are generally solid throughout; but, in some instances, they are composed of a cyst filled with fluid. They are of slow growth, but continue steadily to enlarge, although years may elapse before they attain such a size as to make them the source of inconvenience. They are movable in the transverse direction, but

not in the course of the trunk of the nerve upon which they are seated. Even when they have reached a very considerable size, they do not contract any adhesion to the investing integument, unless, from their situation, they are exposed to continued pressure. The skin is not discoloured, nor, unless the tumour be of unusual magnitude, do we ever see tortuous and dilated veins ramifying beneath it. They are not prone to attacks of inflammation, nor have I ever seen them suppurate, or known their removal by absorption. Descot, however, states that in one instance both the pain and the tumour disappeared spontaneously."

"The pain of which the tumour is the seat is the most important feature. When the tumours are very numerous, they are not generally the source of much uneasiness to the patient; but the solitary neuroma is usually excessively painful. In some instances, there is little inconvenience while the parts are at rest, and the tumour not touched or pressed upon, or at most there is a sense of tingling or pricking running along the course of the nerve or its branches. In other cases, the pain is continued; but, in addition, the tumour is subject to paroxysms of anguish, occurring as a consequence of pressure or other mechanical irritation, or independently of such cause. During the exacerbations, the tumour seems to be in a state of erethism, and is exquisitely sensitive. Many observers contend that pressure upon the nerve above the tumour arrests the pain; and Mr. Smith calls attention to the fact that, in this variety of neuroma, the pain is generally limited to the parts below the tumour. Many cases are on record which show that general epileptic convulsions have been finally and completely arrested by the removal of neuromatous tumours which seemed to have been the starting-points of the disturbing influence; and, in connection with these observations, the advice of Dr. Craigie should be borne in mind by the practitioner, viz., to examine carefully the part from which the "*epileptic aura*" proceeds, as it may be the seat of a neuroma the removal of which may cure the disease. (*Edinburgh Medical and Surgical Journal*, xxix. p. 357.)

It has been supposed by many pathologists, by Bayle amongst others, that the neuroma is a cancerous growth. With reference to this interesting point, we will quote the following considerations, which induce Mr. Smith to agree with those who maintain the opposite opinion: "1. To whatever size the tumour may attain, or however long it may have existed, we do not find that it affects the surrounding tissues otherwise than by its pressure. It never converts them into a texture similar to itself. The form alone of the nervous trunk with which it is connected is altered, its component fibres being separated from each other and flattened. It contracts no intimate adhesions either to the contiguous textures or to the integuments, which can be freely moved even over the largest tumours; nor does it affect the lymphatic glands, either in the vicinity or at a distance.

"2. It does not exert that specific and destructive influence upon the constitution which forms so remarkable and so constant a feature in the history of cancer. It is true that the general health of the patient is frequently impaired; but this is to be ascribed, in such cases, to the continued suffering which he endures, and not to any specific reaction upon his system.

"3. The disease does not recur, after the removal of the tumour, either in the part originally affected or elsewhere. Whether the tumour, when of spontaneous origin, has been extirpated, or the operation of amputation been performed, the patient has been in every instance permanently relieved from suffering. How different is this result from the melancholy consequences of operations undertaken for the cure of malignant disease.

"4. The character of the pain which accompanies neuroma is totally different from that which characterizes cancer.

"5. The structure of neuroma, as revealed by the microscope, presents none of the characters which are supposed by modern pathologists to be diagnostic of malignant disease."

Concerning the etiology of the affection, the author says, "With the exception of the traumatic forms of the disease, I fear it must be confessed that we know nothing with certainty regarding the causes of neuroma. It may, in some instances, result from inflammation, while in others it may be owing to

an exudation of a specific character, the consequence of local congestion or irritation, as supposed by Knoblauch." He does not admit any connection between this disease and the rheumatic diathesis. "There are few affections of more frequent occurrence than rheumatism; few more rare than neuroma."

Mr. Smith describes the *anatomical characters* of neuroma as being very uniform. "The solid, idiopathic neuroma originates either in the cellular structure which connects the neurilemma to the trunk of the nerve, or within one of the smaller sheaths, by which each of the fibres, the aggregate of which constitutes the nervous trunk, is enveloped. In these two cases, the disposition of the nervous fibres upon the surface of the tumour, as also the coverings of the latter, is somewhat different. In the former, where the tumour originates in the neurilemma or its connecting cellular structure, we usually find that the nervous fibres, although flattened and increased in breadth, are not separated from each other so widely as in the latter. Supposing the tumour to be of the same size in each case, they are more confined to one surface of the tumour, generally its deep aspect; but when the neuroma originates in one of the central sheaths, it presses, as it grows, more equally upon the surrounding fibres, which are, in such cases, found more widely dispersed over the surface of the morbid growth. Again, in the latter case, the tumour, when large, is generally invested with a greater number of coverings than in the former. Its immediate capsule is the sheath of the fibre where it has originated. External to this, we find a thin investment, formed by a condensation of the cellular tissue, which connects the general sheath to the trunk of the nerve. This sheath, or external neurilemma, forms the most superficial covering, with the exception, of course, of the subcutaneous cellular texture." The closeness of the connection between these different investing tunics, and the intimacy of the union between the tumour and its immediate envelop, differ very much. The capsule rarely undergoes any degeneration, but is smooth and glistening on both surfaces.

"A section of a neuroma usually discloses an exceedingly dense, homogeneous texture. The surface is smooth, of a grayish-white colour, and frequently the elasticity is such that the cut surface becomes convex. It seldom presents the same shade of colour as the nervous tissue. Its texture is essentially fibrous, or fibro-cellular, but so exceedingly close and dense that the unassisted eye can scarcely ever detect the course or arrangement of the fibres. In the majority of cases, the tumour is solid throughout, and everywhere presents the same appearance and an equal degree of density. Indeed, the uniformity of the aspect of the interior of neuromatous tumours is not one of their least remarkable features."

"When the tumour has attained a very large size (and, according to Mr. Smith, only in such cases), cavities occasionally form in its interior. They vary considerably in their dimensions, do not communicate with one another, and are lined by a distinct shining membrane, which, sometimes villous, is generally smooth. Some contain a serous fluid. In others, the contents resemble rather synovia or albumen, or may present the characters of purulent matter. Others, again, are filled with fibrin; and, finally, some are empty. The lining membrane, generally pale, is sometimes very vascular. But I have never seen, in any of the cavities of neuromatous tumours, fluid or coagulated blood, lardaceous or medullary matter, or any of the substances which are found in malignant tumours; nor have I ever known the neuroma itself, no matter how long it may have existed, or to whatever size it may have attained, assume the external characters or acquire the internal structure of cancerous or encephaloid growths."

"The trunk of the nerve immediately above and below the tumour is normal in appearance, and the intermediate portion is merely altered in form, and thrown out of its natural course; it either passes as a single trunk along the posterior or internal surface of the tumour, or else its separated fibres are dispersed over the surface of the neuroma. In a few instances, I have seen some of the nervous filaments enter the superior extremity of the tumour, although I was unable to trace them through it; but I have not yet met with any example of the passage of the entire trunk of the nerve through the neuroma, as is stated to happen occasionally." The author advises that the tumour and

the attached nerve be macerated in nitric acid before dissection, in order that the tissue may become firmer.

Concerning the diagnosis of this curious affection, the author thus expresses himself: "From what has been stated in the preceding pages respecting the symptoms and characters of painful neuromatous tumours, it is manifest that their diagnosis, although it may be occasionally obscure, is not in general attended with any very serious difficulty. The oval or oblong form of the tumour; its being movable from side to side, but not in the direction of the nerve upon which it is placed, the attempt to move it in the latter direction being productive of severe pain; its freedom from adhesion to the surrounding structures; the healthy condition of the integuments; the extraordinary sensibility of the tumour; the peculiar electric character of the pain, its terrible severity, paroxysmal type, and extension along the trunk and branches of the nerve, constitute a group of symptoms which, in the majority of cases, are sufficient to establish the true nature of the tumour."

The only method of treatment which can be relied on for effecting a permanent cure of the sufferings attendant upon neuromatous tumours is excision of the tumour. "It will therefore be sufficient," says Mr. Smith, "to consider what operation should be performed—should the portion of the nerve with which the tumour is connected be excised along with it?—is it in any case proper to dissect out the tumour from the nervous fibres among which it has grown?—or, finally, may cases occur in which it is justifiable to have recourse to the severe measure of amputation?"

To the first question, much space is devoted, detailing many of the remarkable cases in which both the tumour and a portion of the nerve have been removed, producing perfect cure, with the reacquisition in the parts supplied by the nerve of sensibility or voluntary motion. Mr. Smith calls attention to the fact that there remains, for a longer or shorter period, a peculiar coldness of the parts supplied by the branches of the divided nerve—a coldness felt by the patient and recognizable by others.

The second question is thus remarked upon: "The history of the treatment of neuromatous tumours supplies but few examples in which the second mode of operation to which I have alluded has been adopted. The results have not been very satisfactory, nor have they afforded much encouragement to the practice of dissecting out the tumour from the branches of the nerve, among which it is, as it were, entangled." And again, "It is, in my opinion, an operation which should only be performed when, from the peculiar circumstances of the case, it is impossible to have recourse to any other; for instances may undoubtedly occur in which the size of the tumour would render necessary the removal of so large a part of the principal nerve of the limb that a reasonable fear might be entertained of the occurrence of permanent paralysis or of gangrene (as happened in a case recorded by Swan); and, upon the other hand, the situation of the tumour may be such as to preclude the possibility of having recourse to amputation. Under such circumstances, the surgeon is justified in endeavouring to disengage a large painful neuromatous tumour from the nervous fibrillæ among which it is entangled."

Many cases are recorded in which the operation of amputation has been performed with success.

One section of Mr. Smith's book gives an account at length of the "*General development of neuromatous tumours*," embracing condensed notices of many cases in which "neuromatous tumours have been developed in almost countless numbers throughout the greater part of the nervous system—not only connected with the deep-seated trunks, but visible on almost every superficial nerve of the body; not limited to the extremities, but likewise involving the nerves of the great cavities; not confined to the cerebro-spinal, but also implicating the grand sympathetic system; not the seat of pain, but, on the contrary, the source of no apparent injury to the patient, unaccompanied by any lesion of innervation, even when such nerves as the vagus and the phrenic are involved from one extremity to the other." He then goes on to trace the histories of many such instances—very wonderful, indeed—but our limits will not permit us to follow him through this detail. Knoblauch is of the opinion that these

tumours are not the results of a morbid process, but of an original vice of conformation—that they are indeed true accessory ganglia. But the cases of the kind which Mr. Smith reports disprove such an idea; for in these the number of the tumours were seen to increase from time to time on the superficial nerves, and their interior structure was identical in those which affected the superficial parts, and in those which involved the nerves of the cavities; and they agree also in this respect with the accounts given by Knoblauch. In none of them could any trace of nervous structure be detected.

The *ganglionic system* of nerves presents occasionally, though much less frequently than the cerebro-spinal, instances of the development of these tumours. But Mr. Smith observes that these enlargements generally consist in an hypertrophy of some of the elements of the ganglia, the fibrous, or the fibro-cellular, or the areolar.

Under the head of *Traumatic Neuroma*, the author embraces “all the varieties of the disease which arise from mechanical causes, such as wounds, blows, pressure, the irritation produced by a foreign body in contact with or lodged in a nerve, &c. In these cases, there is, in general, but one tumour, which is, in almost every instance, the source of severe suffering, the pain not being limited to the parts below the tumour, but frequently also extending along the trunk of the nerve towards its origin. This form of neuroma, when it is a consequence of a wound of the nerve, usually consists of a solid tumour, not invested by the neurilemma, and destitute of any distinct capsule. It is extremely apt to form when the entire of the nervous trunk has not been completely cut across, and in such cases appears to be more than usually painful.”

The last point to which Mr. Smith devotes his attention is “*Neuroma succeeding to amputation*.” He thinks that the object of these enlargements, which form upon the extremities of nerves divided in amputation, and which are pretty constantly found, is to protect the nerves; and he thinks they rarely indeed give rise to any inconvenience. If, however, severe pain should be suffered, the tumour may be removed by excision, or, if not otherwise practicable, by amputation of the stump.

The plates connected with the volume are beautifully executed upon stone; they are very large, and present most astonishing illustrations of the numbers and dimensions of this kind of tumour. In every respect, this book must be considered as a very valuable contribution to English medical literature.

F. W. S.

ART. XVI.—*On the Causes, Nature, and Treatment of Palsy and Apoplexy; of the Forms, Seats, Complications, and Morbid Relations of Paralytic and Apoplectic Diseases.* By JAMES COPLAND, M. D., F. R. S., etc. etc. etc. 12mo. pp. 326. Philadelphia: Lea and Blanchard, 1850.

A CONSIDERABLE part of this treatise is, confessedly, a republication from the author's Dictionary of Practical Medicine, while several of the chapters on the connection of paralytic and apoplectic seizures with other disorders formed the Croonian Lectures, for 1846 and 1847, at the Royal College of Physicians. In the present publication, the views of Dr. Copland on the pathology and treatment of apoplexy and palsy are presented in somewhat fuller detail, and in more intimate connection with one another, and with allied topics and related affections. They do not differ, however, from those previously advanced by him. They will be found, with few exceptions, to be based upon established doctrines in regard to the physiology and general pathology of the nervous system, and to be corroborated by the results of recent careful observations and clinical experience.

The order in which the subjects embraced in the treatise before us are considered is, first, the more simple and primary varieties of palsy; next, the uncomplicated forms of apoplexy; afterwards, the complicated states of palsy and apoplexy; their causes; the disorders which often precede them, and the more important points of their pathology; and, lastly, the treatment of their several forms and complications.

Each of these topics is treated with great clearness and ability. There are, indeed, very few works from which the student will acquire more correct and useful knowledge in regard to the causes, nature, symptomatology, and diagnosis of paralysis and apoplexy in their various forms, relations, and associations or complications, or more clear and judicious suggestions in reference to their treatment. The treatise of Dr. Copland is deserving, also, of an attentive perusal on the part of the practitioner, whose investigation into the true character of the cases of paralytic and apoplectic seizures which may fall under his notice, his determination of the indications to be fulfilled in their treatment, and his selection of the remedial agents by which these indications are to be carried into effect, will, we believe, be in no slight degree aided by the views and therapeutical directions presented by the author.

There are several portions of the work to which we should have considered it our duty to direct the especial attention of our reader, had not these, in a somewhat different form, been already for some time in possession of a portion, at least, of the profession, and were we not persuaded that they who feel an interest in them would prefer studying them in their proper connection, now that the treatise is placed within the reach of all by the publication of an American edition.

D. F. C.

ART. XVII.—*Der Aderlass in der Lungenentzündung, Klinisch und Physiologisch erörtert.* Von DR. JOSEPH DIETL, K. K., Polizeibezirks, und Primararzt des Bezirkskrankenhauses Wieden in Wien. 8vo. pp. 128. Wien, 1848.

The Employment of Blood-letting as a remedy in Pneumonia, Clinically and Physiologically discussed. By JOSEPH DIETL, M. D., etc. etc.

THE memoir of Dr. Dietl is a laboured defence of the treatment of pneumonia solely by diet and rest, without the employment of the lancet, tartar emetic, mercury, blisters, or any other of the active remedies which have generally been considered essential for the arrest of acute inflammation when seated in the proper tissues of the lungs.

The author bases his rejection of blood-letting, and other active remedies, upon the results of his clinical experience, as well as upon the views he entertains of the pathology of pneumonia and of the effects produced by the detraction of blood on the progress and termination of pulmonary inflammation.

Although we cannot assent to all the conclusions to which Dr. D. has arrived, we admit that there is much to interest as well as to instruct in his investigations into the pathology of pneumonia. While we are well convinced that the weight of experience will be found to be adverse to the proscription of the lancet in the treatment of the disease, we believe that many of the views advanced by the author are correct, and capable of an important practical application.

Dr. Dietl presents us with the results of 380 cases of pneumonia, of which 85 were treated by blood-letting, 106 by large doses of tartar emetic, and 189 by diet and rest alone. Of those treated by blood-letting, 17 or 20.4 per cent. died; of those treated by large doses of tartar emetic, 22, or 20.7 per cent.; while of those treated by diet and rest only, 14, or 7.4 per cent., terminated fatally.

The fever continued from 5 to 9 days in 41 of the cases that were bled, and from 14 to 21 days in 27. In those treated with tartar emetic, it continued from 5 to 9 days in 66, and from 14 to 21 days in 18; and in those treated by diet alone, in 140 it continued from 5 to 9 days, and in 35 from 14 to 21 days.

The period of convalescence was from 5 to 21 days in 30 of the cases that were bled, and from 22 to 60 days in 38. In those treated by tartar emetic, it lasted from 5 to 21 days in 62, and from 22 to 60 days in 22; while in those treated by diet alone it lasted from 5 to 21 days in 133, and from 22 to 60 days in 42. Thus, the medium duration of convalescence in the first set of cases was 28.9 days, in the second 20.3, and in the third 19.7.

The entire duration of the disease, from the first appearance of fever to the

complete restoration of the patient, was, in 27 of the cases treated by blood-letting, from 10 to 30 days, and in 41 from 30 to 60 days; in 54 of those treated by large doses of tartar emetic, it was from 10 to 30 days, and in 30 from 30 to 60 days; in those treated by diet alone, it was from 10 to 30 days in 119, and from 30 to 60 days in 56: showing that the medium duration of the disease in the first set of cases was 35 days, in the second 28.9, and in the third 28 days.

In 27 of the cases, the inflammation was seated in both lungs. Of these, 10 were bled, and 4 died; 6 were treated with tartar emetic, and 1 died; and 11 were treated by diet alone, and 2 died.

In 142 of the cases, the inflammation was confined to the right lung, and in 211 it was confined to the left lung; making, in all, 353 cases in which the inflammation was of one lung only. Of these, 75 were bled, and 13 died, or 17.4 per cent.; 100 were treated by tartar emetic, and 21 died, or 21 per cent.; and 178 were treated by diet alone, and 12 died, or 5.1 per cent.

In the stage of red hepatization, 23 died, namely, of those who were bled 5, of those treated with tartar emetic 11, and of those treated by diet 7.

In the stage of gray hepatization, 17 died, namely, of those who were bled 7, of those treated with tartar emetic 7, and of those treated by diet 3.

In the stage of purulent softening, 13 died, namely, of those who were bled 5, of those treated with tartar emetic 4, and of those treated by diet 4.

Of pneumonia without complication of any kind, 9 patients died, namely, of those who were bled 7, and of those treated by tartar emetic 2.

Of pneumonia with complication, 44 died, namely, of those who were bled 10, of those treated with tartar emetic 20, and of those treated by diet alone 14.

So far as the evidence based upon the results of these 380 cases goes, it is decidedly in favour of a purely expectant treatment of pneumonia. It would seem to prove that inflammation of the lungs is a self-limited disease, and all that is necessary to ensure its passing favourably through its several stages, is the withdrawal of those influences calculated to interfere with its regular course, all active treatment being avoided as useless, if not injurious.

The premonitory symptoms of pneumonia—fever and dyspnoea—are of longer continuance in young and robust patients, Dr. D. remarks, and in those attacked for the first time, than in older and more debilitated subjects, and in those who have previously suffered from attacks of the disease. This stage of the disease, he admits, may be shortened by blood-letting.

The hyperæmia of the lungs which precedes the setting in of inflammation has, according to Dr. D., no essential part in the production of the dyspnoea attendant upon pneumonia. Nor is the dyspnoea produced by the obliteration of the air-cells of the lungs from a plastic exudation. In general, the patient breathes more freely after the occurrence of hepatization than before.

Extensive hepatization of the lungs obstructs, it is true, the respiratory movements, without, however, producing to the same extent the anxious sense of dyspnoea by which pneumonia is often attended.

As a general conclusion, Dr. D. conceives it may be established, by the results of careful observation, that the mechanical impediments to respiration which occur in pneumonia are neither the sole nor the essential cause of the dyspnoea.

The primary source, he remarks, of the regular action of the nervous centres, and, consequently, of the normal movements of the respiratory apparatus which are dependent upon the regular and continued influence imparted by those centres, is the exchange of gases in the blood, which takes place in the air-cells of the lungs. Now the moment that pneumonia sets in, the exchange of gases is so far disturbed that the escape of the carbonic acid of the blood, with the acquisition in its stead of an adequate amount of oxygen from the atmospheric air, no longer takes place with its normal regularity.

If we examine the blood in cases of pneumonia, we find that there is an increased amount of its fibrine, and a diminution of its red globules. In consequence of this excessive formation of fibrine as a protoxide, the blood is robbed of a large amount of its oxygen, and from the diminution of its red globules, as the principal carriers of the oxygen, this is not again supplied in proportion to its loss; consequently, in cases of pneumonia, the arterial blood

contains an amount of oxygen inadequate to impart sufficient life-power to the nervous centres.

It is evident, therefore, that it is during the exudation of the fibrinous portion of the blood into the air-cells of the lungs that, in pneumonia, the dyspnoea must be the most intense, as then there occurs the greatest consumption of the oxygen of the blood. The occurrence of dyspnoea in the premonitory stage is easily accounted for from the fact that the dyscrasy of the blood, namely, the deficiency of red globules, has then already commenced.

To the change in the chemical relations of the blood, therefore, according to Dr. D., the dyspnoea of pneumonia is to be mainly referred.

Blood-letting in pneumonia favours, Dr. D. remarks, the same change in the blood as has been already effected by the inflammation of the lungs; it must, therefore, by increasing the dyscrasy of the blood, rather augment than diminish the dyspnoea. The relief of the dyspnoea, which is observed to occur immediately after venesection, Dr. D. explains by supposing that the removal of a portion of blood by the lancet promotes the determination to and from the lungs, thus causing a larger amount of blood to be driven, in a given time, through the pulmonary capillaries, favouring in this manner its oxidation, and enabling it to impart to the nervous system a greater amount of its appropriate stimulus.

According to our author, in those cases of pneumonia which are left to their own course, there is never to be observed such profuse perspiration as when the disease is treated by blood-letting. Many severe cases pass through their several stages, and the disease finally ceases without any perspiration. Dr. D. adds that in every instance pneumonia terminates favourably, the more speedily and certainly, the less the patient perspires. Perspiration in this disease is always, according to him, an indication of the improper loss of blood or of adynamia, and is never critical.

With the termination of the exudation into the lungs, the frequency of the pulse returns to its natural grade. The acceleration in the action of the heart in pneumonia is caused neither by any mechanical impediment to the circulation nor by any deficiency of blood. It is, according to Dr. D., the result of the same dyscrasis of the blood which results in the exudative process.

The acceleration of the pulse decreases after venesection—even during the flow of the blood; the effect, however, is only temporary. Dr. D. supposes that blood-letting effects this diminution of the action of the heart in the same manner that it diminishes the dyspnoea, namely, by promoting the circulation through the lungs, and the consequent increased oxidation of the blood; consequently, it is only when the vessels of the patient are loaded with blood that the detraction of blood causes this temporary diminution of the morbid activity of the heart.

In pneumonia treated by the lancet, the frequency of the pulse, according to Dr. D., does not cease upon the termination of the exudative stage of the disease, but continues for some time afterwards. In cases of pneumonia left to their own course, there is, he remarks, seldom so violent an action of the heart as in those treated by the lancet. The augmented action of the heart being, in some part, caused by the detraction of blood.

The pulse in pneumonia has a redoubled stroke, but is not so full as in cases of typhus. The suppressed pulse of the older pathologists depends upon a continuance of the normal condition of the arterial coats, and is to be considered, according to Dr. D., as favourable, while the large and redoubled pulse depends upon an abnormal state of the artery, and is an unfavourable indication.

If, after a single or repeated venesection, the pulse becomes more full, and redoubled, it is usual to say it has become more developed and free. But, in these cases, the so called freedom of the pulse is a certain indication of the increased serosity of the blood and of adynamia.

The large redoubled pulse of pneumonia does not, Dr. D. remarks, change so quickly to the small normal pulse in cases treated by the lancet as in those submitted to a dietetic management. He remarks, also, that the thirst is much

more intense in cases where bleeding has been resorted to than in those treated by diet alone.

Dr. D. admits that by blood-letting the sense of exhaustion and muscular debility is more effectually relieved, in cases of pneumonia, than by the expectant method.

In cases of pneumonia left to their own course, the yellow discoloration of the skin, Dr. D. informs us, decreases in a very striking manner upon the termination of the exudative stage, and soon disappears entirely. This discoloration more seldom occurs, he remarks, in cases treated by the expectant method than in those in which blood-letting has been employed. It is always increased by venesection, and in many cases is produced by it.

When the disease is left to its own course, the physiognomy of the patient assumes, Dr. D. assures us, at the termination of the exudative stage, an aspect in the highest degree favourable. This change of physiognomy is not so striking in cases treated by bleeding, as the debility resulting from the loss of blood prevents the patient from enjoying, at so early a period, the sense of returning health.

After the completion of the exudative stage, in cases treated by the expectant method, the appetite of the patient returns, seldom rising to morbid hunger, while in those in which blood-letting has been resorted to, although the appetite returns equally as early, yet it is often excessive.

The short dry cough of pneumonia, Dr. D. ascribes to hyperæsthesia of the lungs, its chief cause being inflammation of the bronchi. Cases, however, occur unattended with cough. It is unquestionably true, he remarks, that a single bleeding will diminish or entirely remove the cough of pneumonia; this it does by removing the hyperæsthesia of the lungs, and the bronchial secretion, in the same manner as it effects a diminution of the dyspnoea.

The expectant method of treatment presents, we are told, no means for the relief of the cough.

The most favourable cases of pneumonia Dr. D. considers to be those attended with but little expectoration.

In cases of pneumonia left to their own course, it is, our author remarks, a very favourable indication, showing the occurrence of a rapid reabsorption of the effusion into the lungs, if, after the exudative stage is completed, expectoration entirely ceases.

When, Dr. D. remarks, on the eighth or ninth day, in cases of extensive pneumonia left to their own course, with a continued slight cough, the patient discharges a clear albuminous fluid, at first consisting of distinct drops, but subsequently becoming more ropy, and now and then intermixed with flocculi of a puriform appearance, it is to be considered as a normal and favourable expectoration.

When pneumonia is treated by venesection, the matters expectorated undergo many changes, the most important of which is the change of the tenacious, clear expectoration into the so-called sputa cocta. These sputa cocta are, according to Dr. D., the result of blood-letting; the degeneration of the exudation in the lungs into pus or puriform cells being favoured by the detraction of blood. The sputa cocta, he remarks, are neither a necessary nor critical discharge.

Among the most favourable cases of pneumonia, Dr. D. classes those in which no sediment occurs in the urine. The less sediment there is in the urine the more rapid, he remarks, is the reabsorption of the fluids effused in the lungs. Sedimentous urine is not an indication of any critical discharge, but is the result of organic decomposition.

Cases of pneumonia, left entirely to their own course, proceed, we are told, through all their stages, to a favourable termination without any sediment in the urine, while, on the contrary, in those treated by the lancet, the urine usually deposits a copious sediment. Sedimentous urine, Dr. D. believes, may be produced by blood-letting.

In cases treated by the detraction of blood, there occurs, our author remarks, a much greater emaciation than in those managed by diet alone.

In the pneumonias left to their own course, the sensation of debility, according to Dr. D., disappears at once upon the termination of the exudative stage, and the patient convalesces very rapidly; in those in which blood-letting has been resorted to, the patient improves at the close of the exudative stage, but his convalescence is protracted, in consequence of the extreme debility to be overcome.

There is no occurrence of chronic pneumonia, says our author, induced by the expectant method of treatment.

According to Dr. D., the hepatization of the lungs, be the exudation more or less extensive, requires for its removal, in the majority of cases, five days, but sometimes seven days.

In most of the cases of quickly healed or arrested pneumonia, Dr. D. believes there takes place a speedy hepatization, the occurrence of which is accelerated by blood-letting; clinical and pathological facts prove, therefore, he remarks, that the exudative stage of pneumonia cannot be prevented by venesection.

The treatment of pneumonia by the lancet, Dr. D. asserts, favours extensive hepatization, and the formation of abundant fibrinous coagula in the cavities of the heart and great vessels.

Dr. D. asserts that severe and extensive pneumonia not unfrequently occurs and proceeds under the use of the lancet. When hepatization has commenced, the abstraction of blood will, he admits, prevent its further progress.

Rapid reabsorption of the effused matter may occur under each plan of treatment, but Dr. D. considers that it occurs most rapidly under the expectant method. It seldom, he adds, takes place promptly in patients who have been weakened by blood-letting.

The reabsorption commences always, we are assured, when the appetite of the patient is restored; unless the patient's appetite returns, reabsorption does not take place.

Absence of the so-called critical discharges is, according to Dr. D., a certain indication of a rapid reabsorption. He remarks that, in a first attack, if the disease be left to itself, its course being undisturbed by active treatment, reabsorption takes place, in general, rapidly and without the occurrence of critical discharges. In many cases, Dr. D. admits that the reabsorption is not impeded by venesection, but by favouring the purulent softening of the hepatized portions of the lungs, blood-letting may indirectly prevent reabsorption.

Pulmonary abscess Dr. D. believes to be an unfrequent metamorphosis of the hepatized lung, and is not produced by either of the methods of treatment.

Induration or partial wasting of the inflamed parenchyma of the lungs appears, the author remarks, to be favoured by the expectant method of treatment.

Gangrene of the lungs he does not admit to be a consequence of intense inflammation; it may occur under either plan of treatment.

Tuberculosis of the lungs is not favoured, according to Dr. D., by one or other method of treatment.

Blood-letting, he remarks, favours in various ways the complication of pneumonia with other acute exudative processes; namely, with meningitis and pericarditis; it also, he asserts, favours the occurrence of atrophy of the lungs and of pleuritis. Dr. D. maintains, that when pneumonia is permitted to take its own course, it terminates most frequently in a favourable manner; that when treated by the lancet its termination, even in the simple uncomplicated cases, is fatal. He infers, therefore, that the detraction of blood ministers directly to the mortality of the disease; which it does by augmenting the morbid condition of the blood. Hence, notwithstanding the speedy and striking relief which is so generally the result of venesection in pneumonia, he denounces it as unnecessary to insure the safety of the patient; while in many cases it is positively prejudicial. The remedy may, he admits, be adapted to abate certain symptoms, but, nevertheless, its employment to this end must be, he thinks, extremely limited, while the indications for its use cannot be laid down with any certainty, and hence the most judicious plan, in his estimation, is to omit it entirely.

The foregoing sketch of the general conclusions of Dr. Dietl, in reference

to the employment of blood-letting in pneumonia, is drawn up chiefly from the one hundred and two aphorisms with which his memoir concludes.

From this sketch it will be perceived that our author is opposed to the use of the lancet in pneumonia, not merely from its being unnecessary to its successful treatment, but in consequence of its exerting a prejudicial influence upon the regular progress and favourable termination of the disease.

Interested as we have been in the perusal of the memoir before us, convinced as we are that many of the views advanced by the author in relation to certain important points in the pathology of pneumonia are founded on correct physiological principles, we nevertheless cannot agree with him in his prescription of the lancet and all active remedies in the treatment of that disease. Notwithstanding the apparent conclusion adverse to the lancet deduced from a comparison of the cases treated by blood-letting, by large doses of tartar emetic, and by diet alone, as presented by the author, we cannot be induced to relinquish a remedy in favour of the decidedly beneficial effects of which we have our own experience, in addition to the concurrent testimony of nearly all the more authoritative of ancient and modern practitioners—a remedy which, *à priori*, we should select as the one especially adapted to the control of the disease. With the late Dr. Gregory, of Edinburgh, we should be willing, in the early period of a case of pneumonia, to dispense with every other therapeutical means rather than with the lancet and water gruel. We are aware that, long before the appearance of the present memoir, M. Louis attempted to show that blood-letting exerts but very little control over the progress or termination of pneumonia, but has not gone so far as Dr. Dietl in pronouncing its influence upon the disease to be actually prejudicial. We cannot, however, reject the evidence which has been adduced to show that, in young, vigorous patients, and in the onset of the disease, a well-timed abstraction of blood carried to a sufficient extent will not unfrequently arrest the inflammation of the lungs, and prevent the occurrence of effusion and the consequent hepatization. That venesection will generally relieve the more urgent symptoms of pneumonia, Dr. D., with all his opposition to the remedy, is forced to admit; and there are few practitioners who would be willing, or would feel themselves warranted to allow a patient to suffer the distress resulting from a dyspnoea, daily augmenting in intensity, knowing, at the same time, that in the lancet they have a certain means of affording him prompt relief.

We admit that pneumonia may proceed through all its stages and terminate favourably without the employment of blood-letting; but are at the same time satisfied that, independently of the immediate relief to the patient afforded by the lancet, it is a means of controlling the unfavourable and fatal tendencies of the disease, and of adding to the certainty of the patient's final and complete recovery. To derive, however, from blood-letting all the good it is capable of effecting, it must be early and boldly resorted to. An ill-timed, injudicious, and inefficient employment of the lancet in pneumonia is calculated to do but little good, and its effects are then often injurious rather than beneficial. While we strongly deprecate the abuse of the remedy, we must wait for stronger evidence than has yet been presented before we can relinquish our predilections in favour of the lancet as "the chief remedial agent" in the treatment of acute inflammation of the lungs.

D. F. C.

ART. XVIII.—*Observations on Certain of the Diseases of Young Children.* By CHARLES D. MEIGS, M.D., etc. etc. etc. 8vo. pp. 215. Philadelphia: Lea and Blanchard, 1850.

THIS work, as its title implies, lays no claim to the character of a systematic treatise. It presents merely the views of its author in relation to the pathology of a few of the diseases peculiar to the age of early childhood, and his experience as to the best plans of treating them. In this point of view, the observations of Professor Meigs demand our candid attention. Although, in his reasoning upon the nature and causation of the diseases of which he treats, the

author may often indulge in fanciful hypotheses, rather than follow a course of rigid induction from well-established facts, yet, in his practical teachings, based upon observations verified by many years of extensive practice, the physician, in common with the student, is furnished with a rich fund of instruction, the value of which is in no degree impaired by a few errors in doctrine that accompany it. The instruction is the result of long experience and careful observation—the only sources of true practical knowledge; while the errors have their source in a system of hypothetical reasoning, in which the author, we regret to say, with all his acknowledged talents, skill, and experience, is too prone to indulge.

The first chapter of the observations is devoted, 1st, to some general but particularly pertinent remarks on the means of diagnosis in the diseases of early infancy, enforced with all Dr. Meigs's peculiar earnestness in teaching; 2dly, to a cursory but sensible notice of the intra-uterine diseases of children, of the manner in which causes that impair the healthy condition of the maternal blood may affect the well-being and life of the fœtus in utero, and of the duty of the practitioner to watch over the safety of the unborn child during pregnancy as well as during labour; 3dly, to a short review of the circumstances which cause the child to be born in a state of non-viability; 4thly, to a consideration of still-born children—the causes of the non-occurrence of respiration in the new-born infant—and the proper means to be pursued in the several circumstances under which respiration may not occur at birth; 5thly, to a description of the natural process for the formation of the navel, and the accidents by which this process may be interfered with; and, 6thly, to the discharge of the meconium, and to its retention from inertia of the bowels, or from imperforation or constriction of the rectum.

Upon each of the subjects embraced in this first chapter, Dr. Meigs has thrown out hints well calculated for the instruction and direction of the student and young practitioner. We may, it is true, regret the want of fuller details on particular points, and feel disappointed that he has neglected to notice all the accidents which occur at, or within a short period after, birth. We should certainly have expected some reference to the hemorrhages that occasionally take place from the navel altogether independent of any neglect on the part of the accoucheur in properly securing the cord by a ligature. These hemorrhages are always troublesome and often embarrassing to the young obstetrician.

In cases of asphyxia neonatorum, Dr. Meigs advises, when we have failed to excite the respiratory movements, the declining temperature to be kept up by the warm bath, which may be rendered stimulative by the addition of brandy. Unquestionably in such cases the warm bath is a very important agent, and will often aid in bringing into action the respiratory apparatus; but, when respiration does not occur after a few minutes immersion, injury will result from any further continuance of the child in the bath; by raising the temperature of the child, it causes the extinction of its vitality to take place more rapidly; it at the same time prevents the access of the atmospheric air to its surface, which always exerts a very important vivifying influence; we should certainly prefer, in the cases alluded to, dry frictions to prolonged immersion in the warm bath.

Dr. Meigs refers to the occurrence of ulceration of the navel, in new-born children, attended with erysipelatous inflammation of the surrounding skin, extending occasionally over the whole abdomen; involving sometimes the genital organs, and, at others, rambling over other parts of the body. This condition of the navel is always dangerous, often fatal—the infant perishing miserably from deep-seated disease of the subcutaneous tissues, or copious, sanious, and bloody discharges from extensive surfaces of ulceration. It is to be regretted that Dr. Meigs has thought proper to dismiss the consideration of this disease with only a few cursory remarks. M. Trousseau supposes it to result from phlebitis of the umbilical veins; while Dr. Friebe, who describes it under the name of *omphalitis exsudativa*, controverts this opinion. In several fatal cases of ulceration of the navel in young infants, accompanied by erysipelas of the abdominal parietes, we have detected, by a post-mortem examination, the unquestionable indications of an inflamed condition of the umbilical veins.

The chapters on bloody tumours of the heads of new-born children, on in-

flammation of the eyes, and on the sore mouth of young infants, require no particular remark. The author's views, in reference to these affections, are in general perfectly sound, and his directions for their management judicious. The only remark we have to offer is to express our regret that he has not entered more fully into their consideration. Dr. Meigs's delineations of disease are often too sketchy, and his therapeutical directions too general for the use of the student, who, if he shall adopt the work before us as his guide-book at the bedside, will soon find himself in difficulties as to diagnosis and practice; not because his guide-book has taught him anything actually wrong, but from the fact that it has not taught him enough.

Coryza is the subject of the fourth chapter. Dr. Meigs believes that the chief danger to the young infant affected with coryza results from one of two causes: of which the first, and most common, is the filling up of the nostrils with a plug of dried, viscid mucus; and the other, a sub-mucous infiltration, causing the sides of the cavity to collapse. Now, as the nostrils are the principal—Dr. Meigs believes them to be the only—instinctive respiratory orifices in the newborn infant, it is evident that, so long as their obstruction from either of the above causes continues, the aëration of the blood in the lungs must be imperfectly performed. As a necessary consequence, the vitality of every tissue must become impaired, and the functions of the several organs impeded or deranged. These views are no doubt correct. The respiration of an infant labouring under a severe attack of coryza is always difficult and imperfect, and more especially so whilst at the breast or asleep; and the consequences resulting from imperfect aëration of the blood must certainly be taken into consideration in accounting for the suffering and danger attendant upon the disease, especially in very young infants. Still, we must insist that the impossibility of the child deriving a sufficient amount of nourishment from the breast, and the constant irritation produced by its ineffectual efforts to suck, have also some agency in causing the extreme emaciation which occurs in the more prolonged cases, as well as in increasing the danger of a fatal result.

Dr. Meigs' plan of treating coryza is to keep the interior of the nostrils, after they have been carefully freed from mucus, constantly anointed with some of the finer animal oils, or, what he believes well adapted to the case, the ointment of cucumbers.

"The effect of this application would be," Dr. M. remarks, "to cover the lower part of the aperture with a thin glazing of animal oil, upon which the viscosities will not rest and dry, but fall outwards upon the lip, whence they may be readily wiped away; whereas, upon the dry epithelial surface of the orifice, the viscosities adhere, become inspissated, and convert themselves into hard, dry, and solid crusts or scabs."

Dr. M. also directs that a light flannel cap, fitting closely to the infant's head, should be applied and worn until the coryza disappears. This he has found to be alone sufficient, in a large number of instances, to cure the malady.

In the majority of cases of simple coryza, occurring in young infants, we have no doubt that the plan of treatment recommended by our author will be all that is necessary; the disease, however, occasionally assumes a degree of severity, or is complicated with a morbid condition of the mucous membrane of the fauces or of the intestines, when, to ensure the safety of the patient, by its prompt removal, more active remedies will be demanded.

The fifth chapter treats of the bowel-complaints of children. After some very sensible remarks—would that all physicians, nurses, and mothers could read them and profit by them—on the management of the new-born infant, in regard to its application to the breast, the attentions demanded by the condition of its bowels, and its artificial alimentation when this becomes necessary, Dr. Meigs notices briefly the causes and treatment of infantile diarrhoea.

In speaking of the green-coloured discharges, Dr. Meigs refers their production invariably to the action of the acids contained in the intestines upon the colouring matter of the bile. The investigations of Dr. Golding Bird into the nature of these discharges, seem to us to have conclusively proved that, in a large number of cases, they are owing to the presence of altered blood, and

that in those affections, especially, in which the green stools are so prominent a phenomenon, they are, in fact, a form of *melæna*.

The ensuing chapter is on infantile jaundice. It contains many valuable precepts, somewhat mystified, however, by the very means adopted to explain and enforce them.

The chapter which follows, on the child's dress, is excellent throughout. The judicious remarks of the author on the subject of dress are the more important from the mournful fact, that "the cases are beyond computation, of attacks of illness, and of fatal seizures, clearly attributable to the faulty methods of dressing used in the United States."

Cyanosis neonatorum is the subject of the eighth chapter. Dr. Meigs, however, confines his remarks to those cases that are coincident with permanency, after birth, of the characteristics of the foetal heart; and for the cure of which he proposes to cause the blood in the left auricle to press the valve of Botallus down upon the foramen ovale, and thus cut off the direct communication between the right and left sides of the heart; and this he conceives may be effected by placing the child upon a pillow, on its right side, the head and shoulders being inclined upwards about twenty or thirty degrees.

We have read with great care the whole of the author's reasoning in support of his view of the pathology of cyanosis, and the facts he has adduced as illustrative of the efficacy of his plan of treatment; and, while we admit the correctness of many of his conclusions, we have not been able to convince ourselves of the truth of his premises. In the face of all the numerous facts upon record, it is impossible for us to believe that the continuance of an open foramen ovale, or an intermixture of the venous with the arterial blood, is alone sufficient to produce the phenomena of cyanosis; nor can we see how, by the position of the child described by Dr. Meigs, the blood of the left auricle can be made to press down the valve of Botallus, so as to close the patent foramen. We admit that the inclined position upon the right side is one admirably adapted to give relief in many cases of cyanosis; and, further, that in the new-born infant there frequently occurs, from various causes, a state of partial asphyxia, with blueness and diminished temperature of the surface, totally independent of malformation of the heart, or large blood-vessels, in which, by placing the child in the position alluded to, its safety and comfort may be promoted, until the cause is removed by which the aëration of the blood is impeded.

Dr. Meigs reminds his readers, in the very commencement of the chapter before us, that his subject is cyanosis neonatorum. Why he does this, we cannot perceive, for certainly, under that name, cases of cyanosis from malformation of the heart or great blood-vessels may legitimately be included, inasmuch as in nearly all of these the cyanosis becomes apparent immediately or soon after birth.

Some of the cases adduced by the author in illustration of the beneficial effects of position in cyanosis strike us as rather strange examples of that disease.

The remarks of Dr. Meigs in regard to the pathology of asphyxia are unquestionably correct. It is by depriving the brain of oxygenated blood that the extinction of life is produced in cases of asphyxia, and it is to the influence of imperfectly oxygenated blood upon the nervous centres that we are to attribute the morbid phenomena that occur in cases of partial asphyxia. Upon these points there can certainly be no dispute.

Dr. Meigs proceeds next to the consideration of respiratory disorders. Under this head he treats of spasmodic croup, plastic croup, whooping-cough, and laryngismus.

On the various forms of croup the practical remarks of the author are in our judgment particularly sound. In plastic croup much of the fatality by which the disease is attended is, we believe, to be attributed to a neglect of the lancet in the early stages of the disease, and, therefore, urge upon the attention of our readers the deductions which our author draws from his long experience, and from the ample opportunities for observation he has enjoyed. The following are the author's general conclusions:—

"1. Diseases that diminish or hinder the ingress and egress of the respired air through the larynx and trachea destroy the patient by asphyxiating the blood. In proportion as the blood becomes less and less aerated, the nervous force is evolved with less intensity, and the power of the organs and tissues fails in the same proportion.

"2. Spasmodic affections of the muscular organs of the larynx, though less dangerous than the exudative obstructions, are yet worthy of the most careful attention, since they may readily lead to exudative disease in the mucous tissue of the organ of voice, and the trachea.

"3. The exudative corpuscles that constitute the plastic deposits in pseudo-membranous croup are deposited on the surface in consequence of the extreme activity of the inflammation existing there, and not in consequence solely of a state of the whole health, or a state of the blood as a whole. Hence, flecks of lymph, or exudation spots, fixed upon the arches, the tonsils, or pharynx, ought not to be regarded as signs of a depravation of the mass of the blood, or of a dangerous ataxy of the constitution, but only as evidences of an intense activity of the circulation and innervation of the parts affected. It is true that the activity of the circulation increases the risk from the local disorder.

"4. Inasmuch as a slight diminution of the aperture by which the air reaches the lungs leads to exhausting frequency or force of respiration, in order that the requisite amount of oxygen may be imparted to the blood, and as the lessening of the supply strikes at the root of the functions, by cutting off the sources of the innervations, the patient will be probably lost unless the local inflammation, and the constitutional excitement, if any, be counteracted by antiphlogistic treatment.

"5. In resolving upon an antiphlogistic treatment, it is safer to be governed by the considerations of date, and of exigency as to the degree and prospects of aëration, than by a state of the pulse, colour, temperature, and sensibility.

"6. To take blood, after the pseudo-membranous deposit is already abundantly formed, would be useless. The obstruction has in that stage become physical, and cannot be removed by antiphlogistic remedies, and the loss of blood could not be relied upon as a remedy for the deposit already formed.

"7. Yet if, in a case of croup, it should be found, upon due examination, that the tonsils and arches, as well as the pharynx, are affected with plastic deposit, and if the altered sounds of the voice, together with difficulty of breathing, might lead to the opinion that the deposit of exudation corpuscles had not already gone too far, it would be safe to assume that venesection carried to incipient deliquium might check, or even cure the inflammation of the trachea, and thus put an end to the further extension of the exudative processes. It would be much more probable that a patient thus treated should escape from death than one entrusted to the curative power of drugs alone. I have met with instances of the malady in which the child has discharged portions of tube and obtained relief thereby, and such examples are well known to occur.

"Now the expulsion of the tubular pseudo-membrane could only occur in cases where, in the process of depositing it, the inflammation had come to its close, and when the tissues, acquiring a healthier grade of action, had either suppurated, or discharged behind the layer of membrane a thinner material of exudation, or even a natural sort of mucus.

"Nothing is so likely, as I conceive, to bring about this desirable conclusion, as a well-conducted venesection. Hence I should not, in all cases, feel that I was acting imprudently to let blood for the patient, though I were at the same time sure of the existence of the pseudo-membranous lining. On the other hand, should the dyspnœa, and the cyanosis, and the state of the general circulation lead me to no hopeful conclusions of this kind above stated, I should not recommend a resort to the lancet."

Dr. Meigs is an advocate for tracheotomy in cases of croup that are so far advanced as to leave no reasonable expectation of their recovery under therapeutic treatment; determining upon the propriety of the operation from a general view of each case, paying no attention to the results of auscultation of the thorax, which, if confided in, ought perhaps to deter one from the opera-

tion. Dr. M. considers the operation as "scarcely more dangerous than the drawing of a molar tooth."

The question as to the propriety of resorting to tracheotomy in croup is an important one. What is the chance for the entire recovery of the patient afforded by it? Does the operation involve the patient in any additional risk? and in what case, and at what period of the disease, should it be performed?—are questions which must be satisfactorily resolved before the main one—Is it proper to perform it at all? can be properly answered. We have no experience ourselves in regard to the operation, and find it difficult to make up an opinion from the discordant views and statements in regard to everything connected with it made by those who have witnessed its results. We should not, certainly, object to its performance in cases where all other remedies have failed to arrest the disease, provided it were requested by the friends of the patient; and yet, at this late period, we should anticipate less chance of preventing, by it, a fatal termination than at an earlier period of the disease.

The chapter on pertussis, contains many very sensible remarks, all of a decidedly practical character. The author considers pertussis to consist in a peculiar paroxysmal cough, unconnected with any disease of the lungs, fauces, or larynx, sufficient to account for the phenomena, but depending upon some inscrutable morbid condition of the medulla oblongata.

In laryngismus stridulus, which is the subject of Chapter XI., Dr. Meigs is convinced that the diaphragm is the organ always most deeply involved—that it is, indeed, the principal organ affected by the nervous principle of the disease. It is to a spasmodic condition of this same organ that he refers "the insatiable indraught of the breath, followed by the successive and equally insatiable expirations of it" which constitute the paroxysms of whooping-cough.

To Dr. Meigs there appears to be reason for supposing the whole of the phenomena of the first attack of laryngismus, or, as he would prefer calling it, *phrenismus*, to result from a sudden hyperæmia of the respiratory lobe, or medulla oblongata. The disease once begun, it seems to him that there is no difficulty in accounting for the subsequent lapses that take place in the health, from the repeated suspensions of the aërating process, under which arrests the mass of the blood grows rapidly vitiate, and, insomuch, either inefficacious as to the nervous mass, or absolutely poisonous to it.

The salaam convulsions he believes to be merely a form of laryngismus.

Dr. Meigs very properly considers it to be all important to cut short the attack, especially the primary attack of laryngismus, as quickly as possible, and he believes that the diaphragm will be instantly made to act if a lump of ice wrapped in a handkerchief or napkin be applied to the epigastrium and moved over the arch of the hypochondria.

The directions given by the author for the general management of the disease may be consulted with profit. An idea will be formed of them from the following recapitulation, with which the chapter closes.

"I believe our duty in the case consists first, in making a correct diagnosis; 2d, in presenting proper explanations to the friends as to the prognosis, which is often unfavourable; 3d, in obviating the provoking causes, as swollen and distended gums, which are to be relieved by cutting them; 4th, in a heedful regard to the state of the bowels, whose faulty action needs correction; 5th, in directions as to diet, dress, exposure, and all that concerns the hygiene of the case; 6th, in the use of counter-irritants and antispasmodics; in the exhibition of tonics, and in attempts to defeat the demonstration of attack by great quietude, and by applying cold to the region of the diaphragm: and, lastly, in conducting the paroxysm, when formed, to the earliest and least mischievous possible conclusion, by the warm bath and other prompt measures. "I have not," says Dr. M., "in any case made use of venesection. My recollection of certain cases causes me to lament that I have not done so; and I shall, in any future occurrence of the kind, let blood from the arm, should the patient exhibit such evidences of strength as some that I have attended."

We call the attention of our readers to the views advanced by Dr. Meigs in relation to the pathology of the convulsive affections of the respiratory apparatus. It is purely hypothetical, it is true; but, nevertheless, it appears to us far

more plausible and consistent than any of the numerous and contradictory theories that have heretofore been framed.

Scarlatina is the last disease treated of in the work before us. "Scarlatina," according to Dr. Meigs, "is inflammation of the blood-vessels of the derm—or, to use the expression which he prefers, it is *endangitis* of the cutaneous vessels."

"Scarlatina," he remarks, "may be considered as an inflammation of the true blood-vessel, or endangium; the inflammation being chiefly observable in the capillaries of the skin, of the mouth and throat, and of the nostrils. In some of the cases, the inflammatory affection seizes upon the capillaries of the brain, more rarely on those of the stomach and bowels, &c.

"Seeing that the skin is an organ of vast extent, exceedingly vascular, and possessing important relations with the rest of the economy, we need feel no surprise to observe the constitutional disorder produced by so extensive an inflammation as that of the whole derm. As *the crisis of the blood depends upon the healthful force of the endangium*, it is to be expected that violent and extensive disorders of the endangium shall produce great changes in the crisis of the blood, and that those changes will exercise a pernicious influence throughout the economy: The nervous force, dependent as it is on the power of the blood to be charged with oxygen, fails under such conditions of the vital fluid, and the organs and functions, in succession, become overthrown."

"If it be the capillaries of the skin that are solely affected," says Dr. M. in another place, "I have to treat a mere case of scarlatina simplex. If those of the skin, and those of the mucous membrane of the fauces only are attacked, then I have scarlatina anginosa. If the skin, the fauces, the Schneiderian membrane, the larynx, and *à fortiori* the parotids, the heart, the lungs, the stomach, and the encephalon are all together involved by the inflammation of their capillary endangium, then I have a case of malignant scarlatina, and I know that the major part of such cases are mortal ones."

"In some of the (malignant) cases, the skin acquires, from the first, a deadly paleness, the extremities being cool or cold, while the pulse cannot be counted for its frequency, and is a mere thread at the wrists. But the child meanwhile is perishing from the frightful inflammation of the fauces, the pharynx, and the larynx. In this state, the brain seems, in some instances, intact, since the intelligence is wholly unperturbed.

"I presume," says our author, "that here the endangium of the heart, the endocardium, and that of the aorta and the superior or inferior cava, is the seat of the endangitis, and not the endangium of the cutaneous vessels. This is what the vulgar call a case of scarlet fever struck in—a retrocession of the malady from the surface to the interior of the body."—"It is not a case of eruption struck in, but of an original attack of inflammation of the great central vessels, under which the central organs become incompetent to their office or function."

The foregoing constitutes certainly a very beautiful theory, but, still, only a theory. Before Dr. M. can expect us to adopt his pathology of scarlatina, it will be incumbent on him to prove, 1st, that the *membrana vasorum communis*, the endangium, performs the important physiological office he has assigned to it—that of either making the blood, by transmitting to its elements the nervous force, or by maintaining the blood in a living state by its presence and contact; and, 2dly, that in scarlatina certain portions of this *membrana communis* of the blood-vessels is actually inflamed.

The idea of certain fevers being dependent upon an inflammation of the internal tunic of the arteries is not original with Dr. Meigs; J. P. Frank had already suggested the theory, from having detected, in many cases, after death from inflammatory fevers, an inflamed condition of this membrane. The researches of the pathological anatomist can easily determine whether the indications of such inflammation are present or not in fatal cases of scarlatina.

Dr. Meigs denies the contagious character of scarlatina. He has long been fully convinced that scarlatina is a disease whose cause is to be sought for in some intemperies of the air or epidemic principle, of whose intimate nature he is, however, wholly ignorant. In this we entirely coincide with him.

"One might," he remarks, "well venture to resist the general assertion of

its contagion, seeing that it so very often breaks forth fearfully in places where no suspicion of human intervention can be indulged, and that it often enters populous households, affecting only one or two, and sparing three, or six, or eight other members of the family, even where not the slightest precaution against its propagation is taken by way of quarantine, disinfectant, or other means."

The remarks of Dr. M. on the treatment of the several varieties or grades of scarlatina are, in the main, judicious. We are pleased to find him an advocate for the lancet in this disease. There are few of the more severe—non-malignant—cases in which a timely resort to it will not, we are convinced, be decidedly beneficial, and tend to arrest the fatal tendency of the disease.

The medical profession owe many thanks to Dr. Meigs for the publication of these observations. Every practitioner will find himself deeply interested in their perusal; nor can he fail to be instructed by the opinions in relation to the character and treatment of important diseases of one so long and so laboriously devoted to their study at the bedside of the sick. His hypothetical pathology is always ingenious; his views as to the seat and cause of disease having often "the semblance of truth, if not its reality," though occasionally, we fear, they will be found altogether abnegated by the demonstrations of pathological anatomy.

D. F. C.

ART. XIX.—*Some Account of the last Yellow Fever Epidemic of British Guiana.*

By DANIEL BLAIR, M. D., Surgeon-General of British Guiana. Edited by JOHN DAVY, M. D., F. R. S., Lond. and Edin. 8vo. pp. 161. London, 1850.

THIS is a very valuable document. We have seen few accounts of epidemics drawn up with greater fulness and apparent care. Everything indeed that can throw light upon the causes, rise, progress, character, march, habits, and diagnosis of yellow fever, as it occurred in Georgetown, British Guiana, between the years 1837 and 1842, appears to have been carefully observed and recorded by Dr. Blair; and with a candour that proves he had no preconceived theory to establish—no prejudices calculated to distort, misrepresent, or give a wrong colouring to any of the facts connected with the questions he has investigated.

The general conclusions deduced from the observations of our author are:—

1st. That the disease is of local origin, and not infectious or contagious.

2d. That its exciting cause, whatever it may be, is limited as to space of action, and may be avoided by change of place; and, further, that although removal to a short distance, even if the ground be apparently similar, may often be sufficient, it is safest to make the change to a spot altogether different in its character from that where the outbreak took place.

3d. That the newly arrived from a cool or cold climate are more liable to be attacked by it, and ought, therefore, as much as possible, to avoid the localities where the disease is prevalent.

4th. That the natives of the African race, and of the mixed coloured races, though not always exempt from the disease, are comparatively little liable to contract it; generally, they may be considered safe from it, as well as from an attack of remittent fever.

5th. That the tendency to contract the disease in the instance of whites, is less in those coming from warm climates, as the south of Europe, than from cold, as the north of Europe, and North America.

6th. That the disease commonly does not recur in the same person.

7th. That yellow fever, from its past history, has been variously modified—subject to many complications of a perplexing kind, which ought to influence the treatment, and which require to be studied, and, as far as possible, determined, to fix the mode of treatment likely to be most successful in each epidemic.

8th. That, though it has invaded bodies of men occupying apparently healthy quarters, and under circumstances favourable, seemingly, to health, yet most commonly it has broken out in situations of a different character, where the

drainage has been defective, where there has been crowding and neglect of cleanliness—in brief, a complication of circumstances, more or less of an unwholesome kind, such as are likely to promote the action of a specific exciting cause; consequently, that all measures of a sanitary kind cannot be too sedulously attended to with a view to the prevention of the disease.

9th. That the disease hitherto has been of periodical recurrence, not yet calculable, its cause being unknown; and that, though occurring oftenmost in the coolest season, not invariably so, and that no uniform kind of weather, as far as observations hitherto extend, has been connected with its appearance; and, consequently, there can be no certainty at any particular time as to its non-recurrence.

The mean annual temperature of Georgetown is about 80°, the thermometer rarely at any time falling below 77°.

“As Demerara lies permanently within the meteorological yellow fever zone,” says Dr. Blair, “as persons fresh from cold climates and susceptible of the pathogenic influence of yellow fever arrive daily, and as, notwithstanding, it is only after long intervals of years that yellow fever is observed among us, it is evident that some element is required in the formation of the disease besides European blood and tropical heat. It is also evident that, whatever that element may be, it is different from the pathogenic entity of intermittent fever; the latter being a disease which is constantly present here in all its types, complications, and sequelæ.”

“What the yellow fever poison may be has never been demonstrated. Whatever it be, it is probable that in all localities within the yellow fever zone it is the same thing. The auxiliaries of it, however, may be different, as well as the vehicle of communication, and perhaps it may be generated in a variety of soils. Extreme heat and drought, however, do not seem to influence its development here. The year 1833, during which the very beds of the navigable canals were deeply cracked from drought, was not followed or accompanied by an invasion, and the epidemic was long on the decline before the long dry season of 1845 and 1846. The return of our epidemic approximates to the metonic cycle.”

The evidence adduced to prove the non-contagious character of the disease is conclusive.

“During the epidemic, the yellow fever cases in their worst forms were never separated from other patients in our hospital wards. Such a thing was not deemed necessary, and never thought of. They were classified with acute cases. Our hospital nurses never got infected, although in the closest connection with the sick, and often smeared with their ejections; and these nurses were chiefly German and Portuguese immigrants. The resident surgeons, dispensers, and stewards were all susceptible subjects, and, with one exception, about to be named, escaped without an attack. Mr. Bell, the first dispenser of the Seaman's Hospital, then lately from England, spent several nights in Water Street (an infected district), attending on a sick friend, Mr. Huddleton, got yellow fever, and died the night he was gazetted to his appointment, and never did one day's duty at the hospital. Certainly his friend had the same disease, but Mr. B. caught it as Mr. H. had caught it, in *Water Street*. The way to give a yellow fever nurse the yellow fever was not by bringing him in close contact with the sick, but by discharging him or her from the hospital. After knocking about town for a few weeks, and getting into the malarial districts, they would, it is likely, be brought to hospital as yellow fever patients. Several nurses discharged for bad conduct suffered in that way. Dr. Bonyun, then one of the resident surgeons of the Seaman's Hospital, and not long from Europe, slept continuously in the Seaman's Hospital, while it was crowded with yellow fever, without suffering from the disease, and without fear of contagion. In December, 1843, the mate of the ‘*Matilda Luckie*’ was admitted with the *gravior form* of the disease, and of a low type, of which he died. His bed was in a sheltered corner of Ward No. 2, and had mosquito netting all around. Into this bed a seaman named Burton, who was admitted for disease other than yellow fever, slight indisposition, was put for several days without infection of any kind following. Neither was such an experiment deemed hazardous to the subject, nor objectionable, except on the score of cleanliness. Experiments made by

me on the muco-purulent looking matter which frequently exudes from the eyes in the late stages of yellow fever, applied to healthy conjunctivæ, showed that, though slight ophthalmia followed, no yellow fever contamination was the result. Many ships lost hands after their departure from port, and were obliged to put into Barbados and other islands for additional men; but we never heard of any spread of yellow fever among the islands in consequence. None of the Georgetown medical practitioners suffered from the yellow fever except Dr. Fraser and myself. The disease picked out the new comers of an establishment, and no reluctance was felt either by friends, relatives, or acquaintances, to perform any service for the sick. Our ventilation is certainly excellent, but it does not render the exanthemata uninfectious when they pay us their rare visits."

"It is necessary in candour to state that, during the epidemic, many patients admitted to hospital for other diseases, got yellow fever, and some died of it thus as a consecutive disease. There are circumstances, however, connected with these cases of yellow fever, which render contagion an improbable cause. The patients in whom the disease occurred were generally those of the chronic case wards; thus, the ward of the first story of the Seaman's Hospital was that in which they generally occurred there; and, in the Colonial Hospital a Portuguese or German immigrant, if sent down among the negroes (ulcer cases), ran much risk of a yellow fever seizure. My predecessor, Dr. Smith, was of opinion that the cases which happened in the wards on the lower floor of the Seaman's Hospital were occasioned by the vicinity of a pond in the hospital garden, and right to windward. He had this pond filled up in consequence of this opinion, and certainly the cases of yellow fever, commencing in hospital, became very rare afterwards. The ward in the Colonial Hospital was on the ground floor; the floor was below the level of the surrounding land, but was closely boarded with 'groove and tongue,' at the sides, however, many rat holes perforated the floor. Below the floor there constantly existed a pool of filthy water, the oozing of the surrounding ground; to empty which, from time to time, a well, with a pump, had to be sunk in the next apartment. These hospital cases were then, probably, either cases in which the disease contracted in the usual localities was latent on admission, and passed through a long incubation, or the hospital wards were not quite out of the malarial district and elevation.

"The only instance of public precautionary measures being adopted, under the impression that the epidemic disease was contagious, was at Berbice, at Fort Canje. Captain Warburton, at the instance of Assistant-Surgeon Turner, established a rigid *cordon*, and prevented all intercourse with the town of New Amsterdam. Previous to this, no case had appeared in the garrison. An effect of the *cordon* was to prevent hucksters and others bringing in fresh provisions, fruit, &c., to the soldiers. The soldiers were also, of necessity, thrown on their own resources, *pour passer le temps*. However, notwithstanding all communication having been cut off with the town, the yellow fever epidemic soon appeared in the garrison, and poor Dr. Turner fell a victim, not to the yellow fever, according to the practitioners who attended him, but to inflammatory fever, the result of extreme fatigue, mental anxiety, and chagrin."

We have considered the foregoing facts important in consequence of an attempt having been recently made to prove the absolute contagiousness of yellow fever, and that, in certain localities, its introduction can always be traced to the landing of persons labouring under the disease from infected vessels or ports.

According to Dr. Blair, the principal *predisposing* cause of an attack of the epidemic was the "state of the constitution," induced by a previous and recent residence in a cold climate, while the grand *exciting* cause, during several years, was exposure to the influence of certain malarial localities.

"At the beginning of the epidemic, and till after the lull at the end of 1837, Europeans of many years' residence, and some of the black and coloured population, and Indians, suffered from the disease. Among the old European residents, or white Creoles of the West Indies, however, when it occurred, it rarely ended fatally, although the type was of the gravior form. After 1838, the epidemic became almost peculiar to new comers from cold climates. *Complexion*

seemed a matter of little consequence. The negro cook on board of Nova Scotia and United States traders was susceptible, and the dusky South Sea Islander, if prepared by previous northern residence. The lower the isochiemal curve of his native country or home, the more virulent was the attack of the epidemic on the subject of it. Thus, while the per centage of mortality among West India islanders, in the Seaman's Hospital, was 6.9, that of French and Italians was 17.1, that of English, Irish, and Scotch, was 19.3, that of Germans and Dutch was 20, and that of Swedes, Norwegians, and Russians, 27.7. There appears an exception to this law in the case of North Americans, as their per centage of death was only 15.7. This exception, however, has no force, for it is caused by the short period of exposure of the North American traders, whose stay seldom exceeds eight or ten days in port. From the records from which the above centesimal proportions have been calculated, the *simplex cases* have been struck out in all instances."

Intemperance, according to Dr. B., was occasionally a predisposing cause by recklessness of exposure, but entire abstinence from intoxicating drinks afforded no protection. In fact, he adds, *delirium tremens* was not an unfavourable complication of the disease.

"Sometimes the *determining* cause seemed of the slightest description; the shock on the stomach by an ice cream or glass of iced punch, or the indigestion of an unripe orange, would occasionally set the train of symptoms in motion. It seemed, at one time, as if those resident in the infected districts circulated the poison habitually through their system; that old residents had, in an eminent degree, the power of eliminating it and keeping its presence latent—had a tolerance of it; but that new comers, and particularly those of florid complexion and rigid fibre, were constantly, in reference to the presence of the virus, in a state of *tottering equilibrium*; so that in them the slightest unfavourable impulse to the balance, the lowering of the vital powers by fatigue, the suppression of any of the depurating secretions, a shock to either of the nervous centres, or the depressing emotions, were sufficient to excite the latent poison. There was no external sign of the epidemic poison in the eyes of those in health—as at Philadelphia, and described by Dr. Rush; but the notion of its presence in a latent condition, and in augmenting and diminishing quantities—whether circulated in the blood or impressed on the organic nerves—is countenanced by many phenomena of the epidemic: such as slight preliminary attacks, with longer or shorter intervals of perfect health, preceding even fatal attacks, and the well-marked three grades of the disease. Cases have been admitted into the Seaman's Hospital, and private cases have been noticed, death-stricken from the first, wherein the system seems to have been so saturated with the poison as to have prevented any stage of excitement. Cases also have been noticed of genuine yellow fever, but with the characteristics so slight as to raise a doubt as to the peculiarity of the fever."

In those cases—and they were chiefly among new comers—where the immediate attack was referable to a slight determining cause, the disease, we are told, always exhibited its utmost violence.

Patients labouring under intermittent fever, dropsy, ptyalism, peritonitis, pneumonia, anæmia, rheumatism, erysipelas, ophthalmia, syphilis, eczema, hooping-cough, the most inveterate lichen tropicus, scalds, bruises, flesh wounds, and fractures, were attacked, and often fatally, by the epidemic. It has added itself to delirium tremens and to lead colic. It has supervened during the flow of the catamenia.

We shall give the author's description of the disease entire:—

"An attack of yellow fever of our last epidemic, in a well-pronounced case, was manifested by the following symptoms: *Alternate flushings and rigors, resolving within twenty-four hours into a perfect hot stage.* The rigors frequently coexisted with hot skin, and were felt chiefly on turning or making any movement under the bed-clothes. A sensation of heat, felt by application of the hand, chiefly over the head and chest; *supra-orbital headache; suffusion of face, and part of lucid cornea opposed to light*; preternatural redness of the mucous membrane of nares, lips, and *tip and edges of tongue*; recti muscles of abdomen well marked and tense, without tympanitic distension; thirst; nausea,

proceeding on to retching and vomiting of ingesta, and of scanty yellow bilious fluid; alvine evacuations dark, apparently long retained, abilious, and often foetid; tenderness of epigastrium evinced on careful pressure.

"These symptoms continue steady during two or three days, the bilious ejections, however, becoming greenish by the end of that time. The fever then subsides; the skin becomes cool and pleasant; the tongue shows a disposition to clean, and there is less *fieriness of its tip and edge*; thirst abates, and there is some appetite for food. The patient's anxiety and morbid fear of death, which may have been very great, subside, and both he and the bystanders are satisfied of his convalescence. By and by, the eye, which has lost its glistening appearance, assumes a condition of chronic vascularity, of a dull-orange red. The flushed countenance has given way to a sottish appearance, and greasy, dirty complexion. If the eyelid be turned down, a yellowish suffusion is perceived on the sclerotica. The forehead has a dusky appearance, which extends also to the angles of the mouth and over the neck and chest. Pressure of the hand over the chest or abdomen will now leave pale finger-marks, indicating languor in the capillary circulation. Some food, which the patient has been permitted to eat, lies heavy on the stomach, and is rejected. The stomach again becomes irritable, and clear, mucous, acid fluid is thrown off in considerable quantities. If this last symptom continues with severity for a few hours, specks may be noticed in the fluid as if a pinch of snuff had been scattered in it; or a tenacious, dark, clayey deposit will be found in the bottom of the basin. The gastric irritation may now again subside, and the fur will clean off the tongue, and the fiery edge and tip disappear, leaving a preternaturally clean or raw surface; or an attempt at fur may show itself, as if a coat of milk and water had been brushed over the tongue.

"The yellow or purple suffusion of surface is now more marked; in general, local uneasiness is chiefly referred to the fauces, or to the course of the œsophagus, or ensiform cartilage, but the patient feels tolerably well, and hungry. If the finger be now drawn briskly across and against the pectoral muscle, a wheal will follow the pressure, rising up and subsiding with a vermicular motion. After a time, an indication of loss of vital cohesion shows itself, probably by epistaxis or ecchymosis; and, in consequence of some uneasiness, the patient turns himself in bed, and an involuntary gush of black vomit is spurted over the bed and furniture. Bloody oozings take place from the mouth, ears, or anus. The scrotum becomes excoriated. The blistered surfaces become raw and claret coloured. The skin is damp and cold, though the patient complains of heat. The fingers are shrivelled. An unpleasant odour emanates from the breath and body. Black vomit continues to be ejected. The pulse loses strength, till at last it ceases to be felt at the wrist, and the patient dies with intelligence unclouded, and his muscular strength but little impaired, telling you he is getting quite well, or, as a poor dying Irish sailor expressed himself, 'illigant this mornin'.' The foregoing description refers chiefly to the gastric variety of the disease.

"It will be perceived that the disease shows two grand stages: viz., that of reaction, or fever, and that of unhealthy subsidence—the period of irritation, and the period of contamination—and that the duration of the disease is nearly equally divided by these two stages. Practically, however, and perhaps naturally, the stages of the malady resolve themselves into three: viz., that of simple *excitement*, which occupies three-fifths of the duration of the disease; that of simple *acid elimination*, which characterizes the second; and that of *passive hemorrhage* (of which black vomit is one of the manifestations), as the third.

"In cases terminating in *convalescence*, the symptoms were parallel, as far as they went, with those cases ending fatally. Thus an attack may terminate favourably at the end of the first stage, or at the end of the second, or at the end of the third—periods at which nature seems to struggle for a resolution of the disease—the later, however, the less effectually. These three stages, in a measure, represent the three varieties of the disease which prevailed during the epidemic. Thus, the '*simplex*' form is described by the first stage, the '*mitior*' by the first and second, and the '*gravior*' is included in the third.

"When the head is the principal seat of the disease, the cerebral and eye symptoms are most strongly marked; delirium or coma frequently supervenes, and convulsions may close the fatal case. In some of these, black vomit may not occur. Dark, porter-coloured urine, and hemorrhage of black blood from the bowels, may be vicarious of black vomit when the kidneys and bladder, or intestines, are the chief locality of the disease.

"Occasionally, cases were seen among the Portuguese immigrants of what perhaps might be called *chronic* yellow fever, in which the virus seemed for some time smouldering, preceded and attended by a mere *molimen*, instead of the ordinary fever. It seemed as if the *virus* had been partly divested of its irritant quality, and that the disease simulated scurvy. In other cases, the first stage seemed shortened or annihilated by the overwhelming dose of the virus. A few cases occurred in which the characteristic appearance of tongue and eye, and pain in head, were absent for two or three days; but the yellow skin and black vomit preceded death. Notwithstanding, however, these few exceptions to the normal procession of symptoms, the first stage was a necessary antecedent to the second, and the second to the third, almost universally.

"*Secondary symptoms*, or sequelæ, occasionally arose after convalescence from the third stage of the disease, and retarded the restoration to perfect health, and occasionally proved fatal. These were principally abscesses, which, when once discharged, seldom again filled, furunculi, swelling of lymphatic glands, swelling and sloughing of parotid, bullæ, active hemorrhages from ulcerated surfaces, and jaundice. But, in general, convalescence was rapid and complete, and attended with a speedy restoration of all the healthy functions."

The period of incubation, it would appear, is very various. Some systems can, for a long period, throw off the morbid agency; while with others exposure the most casual and temporary produces immediate effects.

The invasion commenced sometimes with malaise of several days duration. Sometimes the formative stage showed itself in diarrhœa; in a few cases, it commenced with apoplectic or paralytic symptoms. Sometimes, if the treatment was early adopted, or the patient was suffering from another malady, reverberations, repulse, and relapse, were observed in the first stage, thus abnormally extending its period. About one-half of the normal cases, it is stated, were so sudden and pronounced in the seizure that the exact hour of attack could be precisely ascertained. Thus the hours of *six* A.M. and *six* P.M., when, in the latitude of Georgetown, the most violent of atmospheric disturbance of the day occurs, were most favourable to the seizure.

"The *average duration* of an attack of the disease ending in convalescence, estimated from 1158 cases of the *gravior* form and 428 of the *mitior* form, was 6.34 days for the former, and 5.35 for the latter. The *average duration* of a fatal attack, estimated from 404 cases, was 7.08 days. In these estimates, the day of attack, and the day of death or convalescence, are reckoned *each* one day. Although the maxima and minima days of duration differed widely from the average—those of the *gravior* being twenty-three and two, and those of the *mitior* thirteen and two, and those of the *deaths* twenty-four and two—yet the vast majority of cases fall in closely with the averages, and this coincidence happened always more particularly when the disease was purest, and the epidemic pulsations most intense. The averages may, therefore, be assumed as the *law of duration* of each class respectively. The manner in which this law of duration was disturbed was chiefly by abnormal prolongation of some one of the stages, or by the interval between the stages being so prolonged as to amount almost to convalescence, or suddenly cut short by resolution, or fatal congestion, or nervous shock. Healthy activity of the secretions, such as bilious stools and copious urine indicated, would prolong the duration of fatal cases. Treatment had a marked effect on the law of duration; and complications, and secondary symptoms, and relapse from ill-managed or imperfect convalescence, also disturb it."

The average number of days during which patients convalesce from the yellow fever remained in the hospital till perfect health was restored was, for 417 *mitior* cases, 6.55, and 1140 *gravior* cases, 7.91 days. Retarding and

accelerating causes acted with as much force on this period as on that of actual disease.

"A purple, and sometimes a lobster-red, condition of the skin seemed occasionally the equivalent," we are told, "for yellowness during life; and, although *white* marks were left temporarily by pressure, the purple or livid colour, after death, subsided to dependent parts of the body, leaving uniformly a yellowness of upper parts." "It certainly must be admitted," says Dr. B., "that a large proportion of cases of yellow fever are unattended by yellowness of surface or even of eye, for the disease may be cut short by treatment, or the epidemic may be of the simplex grade, or the mitior, and the yellow suffusion may be so slight as to escape notice. But it is a highly important symptom, and, in every fatal case, the yellow suffusion, of a deeper or fainter tint, will be observed after death. The yellowness of this fever, which seems independent of obvious liver disease, is truly characteristic, and furnishes, though not an unobjectionable, a good appellation for the disease."

Black vomit, Dr. B. remarks, is not a symptom essentially necessary to a genuine case of yellow fever.

"It manifests," he adds, "only one phase of the stage of passive hemorrhages; even the lochial may be its equivalent as well as its accompaniment. As some time elapsed before the precursory or *white* vomit was distinctly recognized as a symptom of the malady, the number of cases in which it occurred is no doubt under-stated from the case-books. It is shown, however, as might be expected, to occur oftener than black vomit. Out of the 2071 cases of *mitior* and *gravior*, it is noticed in 417, while there are only 366 cases in which black vomit occurred. Black vomit generally followed the precursory vomit, but many cases of death have occurred after the latter only.

The per centage of the mitior and gravior cases in which black vomit occurred was 17.67.

"Black vomit," says Dr. B., "although a very unfavourable symptom, and more so than yellow skin, being as 75.68 to 46.23, is still not necessarily fatal. Out of the 366 cases of it, 277 only died, giving the centesimal mortality just stated, viz. 75.68."

"Yellow skin and black vomit were closely associated as to the time of their appearance: but the former was generally the antecedent (fortunate for the patient when otherwise). Thus, in 139 ascertained cases, the former preceded the latter in 51 instances. The double symptom of yellow skin and black vomit was of all others the most dangerous, and especially when the latter succeeded the former, and within twenty-four hours. The co-existence of these two symptoms was observed in 144 cases, being 6.95 per cent. of the 2071 mitior and gravior cases admitted to Seaman's Hospital. Out of these 144 cases 122 died, making the mortality of the conjoined symptom 84.72 per cent."

We cannot follow the author throughout his excellent analysis of the symptoms, essential and occasional, of yellow fever. It is particularly interesting and instructive.

From his account of the post-mortem appearances we copy the enumeration of the lesions observed in the liver and spleen, and the description of those generally presented by the stomach.

The *liver* in 3 cases is recorded as being natural; in 2 with recent adhesions of peritoneum and diaphragm; in 20 as enlarged; in 4 as enlarged in the right lobe; in 4 as unusually small; in 4 as remarkably elastic; in 1 as flabby and elastic; in 17 as friable; in 2 as much softened; in 1 as hard and grating; in 2 as dense; in 1 as affected with cirrhosis; in 10 as having externally a deep yellow colour; in 9 as pale yellow externally; in 1 as having its external surface mottled yellow and red, and yellow and slate colour; in 1 the liver is described as pale green; in 2 as greenish-brown; in 1 as very red; in 1 as of a Bath brick colour; in 1 as of a pale slate colour; in 2 as ochrous brown; in 1 as reddish-yellow; in 1 as mottled externally, Bath brick colour internally; in 2 as of Bath brick colour externally, and speckled internally; in 1 as mottled pinkish red externally, and clayey-yellow internally; in 1 as mottled of different shades of yellow externally, and dark yellow internally; in 2 as light brown externally, and anæmiated internally; in 1 as speckled red on yellow ground

externally and internally; in 16 as presenting red dots surrounded by yellow rings internally; in 1 it is described as inflamed; in 13 the portal system is described as gorged, and in 2 as empty; in 17 the liver is described as affected with parenchymatous congestion; in 2 as anæmiated; in 1 as gorged with bile drops; in 4 with black blood, and in 4 with thin serous blood.

The *spleen* in 6 cases is described as perfectly healthy; in 12 as friable and soft; in 1 as almost fluid, with broken down black blood; in 1 as containing much grumous blood, and in 2 other cases much thin claret like blood; in 11 cases it is described as congested, and in 14 as enlarged.

"The *blood*," says Dr. B., "in the dead subjects was almost invariably abnormally thin and black.

"The second anatomical characteristic of the disease was the hemorrhagic lesion of the mucous and submucous surface of the alimentary canal, and the peculiar excretions therein contained. The cardiac end of the stomach was the chief site of the inflammatory or congestive hyperæmia. The œsophagus, particularly at its gastric extremity, was next in frequency affected. The affection of the œsophagus had, however, some peculiarities, and chiefly in being attended with a peeling or erosion of the epithelial coat in longitudinal stripes. This erosion might occur without hyperæmia, and *vice versa*.

"The erosion was always more or less marked as vomiting had been more or less severe during life. The intestines followed the œsophagus in frequency of lesion. Sometimes the congestion or ecchymosis of the mucous and submucous surface of the alimentary canal was so intense and extensive as to give them a sphacelated appearance, and an appearance of gangrene to the whole intestinal peritoneum, on opening the walls of the abdomen.

"The villi were the chief seats of engorgement, sometimes to perfect blackness. The hyperæmia had sometimes a stellated appearance, sometimes dotted, or blurred, or striated, sometimes arborescent, and generally of a rusty red colour; frequently inflammation, congestion, and ecchymosis were so blended as to defy discrimination. The hyperæmiated or eroded surfaces were generally clothed with viscid mucus; sometimes the stomach was of a uniform deep claret colour, as if by the imbibition of imperfectly formed black vomit, and giving to its peritoneal coat a rosy hue. Sometimes the general red discoloration of an apparently inflamed piece of stomach or intestine could be scraped off without injuring the mucous tissue. On such a piece being slightly washed of its mucosities and held up to the light, the appearance resolved itself to a mere film of blood, adherent apparently by the undeveloped epithelial matter. The ecchymosis was occasionally in the mucous, frequently in the submucous, and only once in the subperitoneal tissue. The unusual condition of the solitary and aggregate glands seemed due entirely to surrounding and interstitial congestion and ecchymosis. At the ilio-cæcal valve the hyperæmia was thickly punctated, like a close shaven black beard.

"Submucous arborization was of general occurrence in the large vessels. In one case it was in six-inch length patches in the jejunum, and of three feet in the ileum, accompanied with extensive ecchymosis. Sometimes the capillaries (particularly of the œsophagus) were developed as in chronic ophthalmia, but of a dark colour. The ulcerations occasionally showed a foul sloughy base, but in general they were merely peelings or erosions of unusual depth, and they were in longitudinal stripes. Hyperæmia frequently reddened and elevated their edges. Their surface was frequently formed of the submucous tissue and meshes of dead capillaries. The source of the black vomit could always be traced to hemorrhagic spots generally in the stomach, but, if not there, in the œsophagus or duodenum. The presence of black vomit in the stomach after death was the rule, its absence the exception. It was generally found in considerable quantities, so that on turning over the cadaver it would gush profusely out of the mouth and nares. Black vomit seemed merely an ulterior effect of the hemorrhagic condition of the blood, mucous membrane, and capillaries; and although sometimes absent, its antecedent lesion was always present in a pure case of death from yellow fever. An early and fatal complication might destroy the patient before the disease was matured, and then, of course, many of the anatomical signs would be absent. If the patient died of secondary

symptoms, then many of the anatomical signs were absent, for they had passed away. Bloody black vomit was found in death after the third stage of the disease had shown a tendency to convalescence. In a case of death sixteen days after black vomit and yellow skin, although no black vomit was found in the stomach after death, the hemorrhagic spots of mucous membrane still persisted. But in cases of normal duration, sometimes black vomit was not ejected before death, nor found in the stomach after death. In these cases the development of the sign seemed to have been prevented either by the supremacy of an active *inflammatory* condition of the stomach, or by traumatic hemorrhage draining the stomach and rest of the body of its blood, or by excessive engorgement of, or extravasation into, a neighbouring viscus or cavity.

"Where black vomit had been ejected during life, still it did not, in a few cases, show itself in the stomach after death. Sometimes emesis, by emptying the stomach immediately before death, caused this absence of the black vomit. Sometimes its ejection and elimination had ceased for a short time before death, and in that case the peristaltic movements carried the contents of the stomach into the intestines. Treatment had its effects in altering the appearance of black vomit. Where the *mistura cretæ* had been used, or much milk allowed in the last stages, the character of the black vomit was much altered by the admixture.

"The anatomical signs of our late epidemic disease," remarks Dr. B., "were fully as characteristic as the living symptoms. The yellowness of surface, particularly of the eyes, the *embonpoint*, the condition of the blood, the hyperæmia of the alimentary passages, particularly the cardiac ends of the stomach and œsophagus, and the duodenum; the hemorrhagic state of the system, as indicated by the surface of raw blisters, by the oozings in the mouth, and the black vomit in the stomach, by ecchymosis and passive congestions; the peeled condition of the œsophagus; the *unjaundiced* condition of some or all of the internal white tissues—gave in the dead subject indications which were not to be mistaken for the effects of any other known disease of the colony."

In regard to the treatment, *general blood-letting* was not found beneficial, excepting in a very few cases; *local blood-letting* was frequently requisite as subsidiary treatment. But in all cases the more economical the expenditure of blood the better. In no case was it admissible after the first stage. *Opiates* were found to be doubtful, if not injurious.

"The *materia medica* of the practitioner in yellow fever," according to Dr. B., "might, after the experience of the entire epidemic, be almost included in the following list, viz.: a *compound of calomel and quinine*, in the proportion of 20 grs. of the former to 24 grs. of the latter;" "*castor oil*; *water*; *cantharides blister*; *Rhenish wine*; *chalk mixture* (without any essential oil); *creasote*; *liquor potassæ*; *ammoniacal paste*; *sinapisms*; *musk*; *carbonate of ammonia*; *spirit of mindererus*; *magnesia*; *laxative enemata*; and *lemonade*. The dietetics were barley water, sago, arrowroot, tea, chicken broth, beef tea, and toasted bread (unbuttered). The above includes all that is peculiar in the established treatment of normal yellow fever. Complications were treated on general principles." "The 1st, 2d, 3d, and 4th classes refer to the treatment of the first stage of the disease; the 5th to the intermediate stage; the 2d, 5th, and 6th, to the third stage; and the 7th to a protracted state of the second and third stages—as if the disease were a *chronic yellow fever*; in cases of which yellow suffusion generally persists long without much irritability of stomach, or evolution of acid gastric secretions."

In the formative stage, or within a few hours after the development of the first stage, the compound of calomel and quinine, followed in six hours by $\frac{3}{4}$ of castor oil, would perhaps, we are told, in nine cases out of ten, immediately arrest the disease. If the disease did not, however, yield to the first dose, the calomel and quinine are to be repeated every six hours as long as there was no contra-indication, and as long as the first stage of the disease existed. This treatment, begun with very early in the first stage, might, according to Dr. B., be designated a specific. He had never occasion to prescribe more than six doses of 20 grs. calomel to 24 of quinine to any one patient, and he has no recollection of ptyalism ever following its use.

Much frontal headache, with injection of eyes and suffusion of face, might require a division of the temporal arteries, or blisters to the nape of the neck; crimson-edged tongue, tender epigastrium, and irritable stomach, might require cupping, and sinapisms or blisters. Intense heat of surface might require the cold drip or wet sheets: moderate heat of surface required sponging with vinegar and water, or tepid water only.

An intolerance of the quinine, shown by an unusual and violent effect on the head, with much deafness, contra-indicated its further use, and offered the most unfavourable prognostic of the case.

The best treatment of the second stage was, we are told, *expectant*, with a proper regulation of diet and regimen. If aperients are required, magnesia or enemata are the best. If a stimulant is permitted, it should be a moderate quantity of the best hock or weak brandy and water, well cooled, but not iced. If much gastric irritation is present, and the epigastrium has not been blistered, repeated sinapisms will be beneficial, with liquor potassæ in barley water.

In the third stage, a cautious regulation of diet is demanded. When counter-irritants are required, the ammoniacal paste or sinapisms are the best. Blisters are improper. The diminished heat of the extremities must be met by dry frictions, light flannel clothing, and hot applications; emesis, by drop doses of creasote made into a light emulsion with mucilage and sugar; or by the chalk mixture, ζi every one, two, or three hours; or by the liquor potassæ in doses of 20 drops in barley water. When the stomach would bear it, carbonate of ammonia combined with musk was found highly beneficial; ten grains of the former and thirty of the latter as a dose, to be frequently repeated. In some rare cases in which the heat of the extremities persisted, the aq. ammon. acetat. with an excess of ammonia was found to be of advantage, as also a mixture of carb. ammon. and hydriodate of potash in solution. Carbonate of soda was sometimes substituted for the liquor potassæ. Of all cordials the best was pure Rhenish wine. Dr. B. has often given it to the extent of two bottles in twenty-four hours.

"Chicken broth, milk, barley water, and thin arrowroot or sago, should be given frequently, but in small quantities. When convalescence is established, it is of the utmost consequence that the transition to the diet of health should be gradual. Cases of exacerbation and relapse have been known to follow the too early transition from even barley water to low diet."

"After the cessation of the disease, and the stomach is restored to health, a jaundiced state of the skin, and ill-conditioned abscesses, and other occasional sequelæ will require lemonade, oxymuriate of potash, and decoction of cinchona, or change of air, and treatment on general principles."

The foregoing memoranda of treatment refer to the epidemic in the *mitior* and *gravior* grades. When the simplex grade prevailed, the cases, we are told, were infallibly cured by a purgative and quinine pushed on to "cinchonism."

Of the interesting papers in the appendix, and of the valuable notes of the editor, Dr. Davy, we have been unable to give any particular notice. The excellent report of Dr. Blair we recommend to the careful perusal of all physicians who may be so located as to be called upon to treat the disease which constitutes its subject.

D. F. C.

ART. XX.—*Elementary Chemistry, Theoretical and Practical*. By GEORGE FOWNES, F. R. S., &c. Edited, with additions, by ROBERT BRIDGES, M. D. Third American, from a late London edition, with numerous wood engravings. Philadelphia, Lea & Blanchard, 1850: pp. 516.

A *Practical Handbook of Medical Chemistry*. By JOHN E. BOWMAN, Demonstrator of Chemistry in King's College, London, &c. Philadelphia, Lea & Blanchard, 1850: pp. 288.

In the above works, which have just appeared, we are called on to lament on the one hand the removal of an old fellow-labourer from the busy scenes of this world, and to greet a new in similar but not the same paths. In the death

of George Fownes (January, 1849) science has lost one of its bright luminaries, long known to us as the author of one of the most concise, clear, and comprehensive elementary works on chemistry that have appeared since the earlier editions of the "Elements" of Turner. The constant accessions to this science, and to which our author added his quota, render it necessary that each successive edition of a chemistry, however elementary in character, should be not a reprint only of the prior, but also a thorough revision; the errors or mistakes of the past corrected by the increased knowledge of the present, and such additions to the science as may have in the meantime accumulated, be examined, compared, and selected, so that no important facts may be omitted which tend to elucidate either its theory or practice. To the English edition (the third), from which the American is taken, much has been added, without, however, a marked increase in the size of the book itself, rendering it as perfect and accurate as possible up to the period of the author's decease, any alterations or additions which then became necessary in those parts which remained untouched being supplied by his friend Dr. W. Bence Jones. The former editions of this work have made it so well known that to enter on any extended notice would be unnecessary; all that may be required is, to point out such additions as may be observed. The subject of heat offers such opportunity, and we there find some additional observations in relation to change of state and sources of caloric. In chemical nomenclature and the general principles of chemical philosophy, paragraphs have been inserted here and there, illustrative of the points under consideration or enforcing the doctrines taught. Alterations may also be observed in treating of metals and their compounds, substances transposed, new compounds introduced, and the new metals, and their more important combinations described. It is in the department of organic chemistry that the greatest range is allowed by the greater progressive increase of this part of the science. The alterations and additions here made have been characterized by the good judgment previously exhibited by our author, in his selection, from the large field, of such parts as may have a particular bearing on theory or practice, without encumbering the subject with points of doubtful utility. The alcohol series, the *vegeto-alkalies*, and the artificial *vegeto-alkalies* may be adduced as exhibiting examples of this. The work may hence be considered as sustaining the reputation previously acquired, as one of the best elementary works on chemistry which are accessible to the American student.

The second work, the title of which is given above, is the production of one favourably known to us as the author of a work on "Practical Chemistry," to which this may be considered as a companion, recommending itself in a more especial manner to the practitioner of medicine by treating of subjects in which facilities of examination and means of discrimination are to be particularly desired. As a medical chemistry, it is confined to the examination and analysis of the fluids and solids of the body, and the more important animal products, together with the main points in toxicology. In this examination, chemical manipulations and tests are not solely relied on, but aid is drawn from the microscope, in detecting and distinguishing those minute forms, crystalline or other, which may have sufficient distinctive character for this method of procedure. In treating of the different subjects, a general account is given of each of the matters found associated together, and characteristic of the fluids or solids of the subjects in question in the healthy condition. The physical and chemical characters and constitution are given, and the tests by which they may be recognized pointed out, and where a crystalline or other peculiar form is assumed, the microscopic appearance is illustrated by woodcuts characterized by accuracy and neatness. Attention is also directed to the proportions which the different substances bear to each other and to the whole mass, when sufficiently constant, the occasional changes which take place in this ratio, and the causes which may produce changes without properly passing beyond the scope of healthy condition. The details of the quantitative analysis are minute, and readily followed out by one accustomed to manipulations of this kind. After the healthy condition has been fully noticed, the morbid changes pass under review, the abnormal conditions separately considered and illustrated, and

finally the methods laid down by which these points may be ascertained, either qualitatively or quantitatively. In this mode, urine, urinary, biliary, and gouty calculi, blood, milk, mucus, pus, bone, and mixed animal fluids are successively treated of, characterized, examined, analyzed, and illustrated, and the whole terminated by an account of poisonous substances and the means by which they may be detected in organic mixtures, the blood, and tissues of the body. On a careful perusal of this work, we can recommend it as one well calculated to aid the investigation of morbid changes and facilitating the microscopic examination of organic bodies, the importance of a thorough knowledge and facility in which is becoming more and more evident as the attention becomes more turned to these points.

ART. XXI.—*Human Physiology*. By ROBLEY DUNGLISON, M.D., etc. etc. "Vastissimi studii primas quasi lineas circumscripsi." *Haller*. With nearly five hundred illustrations. Seventh edition, thoroughly revised, and extensively modified and enlarged. 2 vols. 8vo. pp. 692-736. Lea and Blanchard, 1850.

ALL who would study the physiology of the human organism, whether as the basis of their investigation into its various diseased conditions, with their prevention and their cure, or simply as an important branch of liberal knowledge, will find in this new edition of Dr. Dunglison's treatise a very full, fair, and, at the same time, lucid exposition of the existing state of the science.

The work has in every part been subjected to a thorough revision. The important contributions to our knowledge of the functions of the different organs of the human body, and of the laws by which it is governed, as a living organism, derived from the labours of cotemporary physiologists, have been carefully incorporated into the present edition, while every available illustration, by means of wood and other engravings, has been adopted to facilitate the communication of clear and accurate views of the subjects treated of.

This seventh edition of Dr. Dunglison's *Human Physiology* will bear a very favourable comparison with either of the numerous elementary treatises that have recently appeared, and in some respects is better adapted than either of them for the use of the student, whether professional or general. D. F. C.

ART. XXII.—*Report of the Trial, "The People v. Dr. Horatio N. Loomis for Libel."* Tried at the Erie County Oyer and Terminer June 24th, 1850, &c. &c. Justice Mullett presiding. John Treahor and Leander J. Roberts, Associate Justices. Reported by Frederick T. Parsons, Stenographer. Buffalo, 1850: 8vo. pp. 50.

SUCH is the title of a pamphlet which we find on our table, and which, we think, demands, at our hands, a more serious notice than the mere title, as it reads, would appear to indicate. Unity of principle, of purpose, and of action, has been the dream of the enthusiast, and the object of desire to the sanguine votary of truth, to whichever of the great pursuits of life his attention may have been directed. In religion, one church; in politics, no party; in science, perfect uniformity of opinion and harmony of action, form the *ideal* of human perfection.

The calm observer of things as they are has need of little experience, in either line of life, to convince him such a condition has not yet been obtained; while the philosophic investigator of human character will probably reach the deeper conclusion, that human nature is so constituted that this result not only cannot be attained, but that it is hardly desirable. Conflict of opinion, and competition in effort, are great elements of usefulness, stimulating to nobler designs, and leading on to loftier attainments. No circumstance so effectually paralyzes human energy as the tame monotony of uniform acquiescence.

Alas, however, for fallen man! Every power conferred upon him for good purposes is perverted to evil results. The knowledge of this fact imposes upon us the necessity for constant watchfulness, lest more of evil than of good should be produced by even the soundest principles of our nature, and the most salutary influences which are brought to bear upon us. Ambition of eminence, and competition in effort, when properly regulated, lead to glorious and noble results; without the guidance of sound discretion, or freed from the control of honourable principle, they bring controversy and discord in their train, and subject their votaries to ruinous overthrow.

Whenever controversy is excited, the intensity of the feeling displayed will ever be in proportion to the magnitude of the interest involved; and to this cause we are disposed to ascribe the earnestness of those which agitate the medical profession. Lovers of peace as we all are, we yet feel that the interests committed to our care are too high to be sacrificed at the shrine of personal ease and quiet, or for the sake of professional unity. Fain would we present an unbroken phalanx against the irregular host of empirics and quacks who prowl around the great body of disease and suffering committed to our care, or, vulture-like, hover around it to prey upon its misery. This, however, may not be. All minor considerations must be sacrificed to the great duty we owe to stricken humanity; and when in the prosecution of our duty we are led into the expression of views which indicate diversity of opinion from our fellows, we hope never to be deterred by taunts of the proverbial "disagreement of doctors," such as are thrown out by one of the counsel in the case which now claims our attention, or by the imputation of motives so base as professional jealousy, imputed to the seventeen physicians of Buffalo who expressed an opinion adverse to the course which has given rise to these proceedings. Nay, instead of feeling shame when reproached with these differences of opinion, we hail them as tokens of a lively sensibility to the importance of the interests with which we are intrusted.

Within the last quarter of a century, there has been a gradual but progressive increase of the spirit of competition in medical teaching. Numerous schools, with greatly varying facilities for communicating medical instruction, have sprung up in all our great cities, and in very many smaller places. While confined among moderate numbers, and restrained within reasonable limits, the effect of the struggle for superiority was wholly salutary. When, however, descending from the high effort which should furnish the greatest amount of available and useful knowledge, and best train the mind, and develop the capacities of the student, some of our medical colleges resorted to efforts to allure classes by specious exhibitions *misnamed* "Clinical Instruction," and adapted rather to attract students by their novelty than to furnish them with solid information, a deep gulf of ruin was opened athwart the onward course of the profession, which it will require much skill, and no little self-sacrifice, to fill up or avoid. Far from us be the disposition to undervalue the benefits conferred by "Clinical Instruction;" properly conducted, it requires more skill on the part of the teacher than any other part of the system of medical education. To the student it is *indispensable*; somewhere, and under some teacher, it must be had. Happy he who finds an instructor less severe to himself, and less dangerous to his patients, than personal experiment under the guidance of his own discretion. Only at the bedside of the patient, and by daily repeated observation, can this instruction be imparted and received. In the theatre and the lecture-room, "Clinical Instruction" is not less deceptive than the name is inappropriate.

Exhibitions of operative surgery have their use, and within suitable restrictions should always be presented to medical classes. When properly introduced by the display of the reasons which demand the resort to them, and the principles on which they are conducted, they serve to familiarize the student with scenes in which he will be called to participate, and to fasten on his mind, by association, knowledge which would otherwise be loose, as it were, on his mind from the want of points of attachment. What we condemn is the substitution of this for true clinical teaching, in which the student sees and examines for himself the condition of the patient, and watches, day by day, the progress of the case whether to recovery or dissolution, and learns by direct observation,

and not by the report of another, the action of the remedies administered. The office of the judicious preceptor, himself well skilled in the science and art of medicine, affords opportunities for such instruction which should never be neglected, and which are vastly more valuable than the lecture-room of the college, and which can only be exceeded by the true sphere of clinical instruction, the wards of a large and well-regulated hospital. No other arrangement can compensate for the want of this indispensable part of the apparatus for medical education; and though circumstances may compel some students to forego the advantage, no consideration can justify the neglect to make this provision where it is within the verge of possibility, much less the expression of any doubt as to the superiority of those institutions which possess such privileges.

These remarks, bearing on the general question, have been elicited in connection with the pamphlet under consideration, which appears to us to exhibit the utmost extent to which the abuse of this mode of teaching can be carried. Happily, we are without personal knowledge of any of the parties interested, and can, therefore, come to the consideration of the subject wholly free from bias of any kind whatever. Much more congenial to our feelings would it be to praise, than to censure, any effort made with the avowed object of promoting the advance of medical education. We have given ourselves with all our energies to the advancement of the plans of improvement which have been agitated so strenuously under the auspices of the American Medical Association. Where we cannot accord commendation, we would fain be silent; but there are cases in which even silence is treason to the cause in which we are engaged. The case in point appears to us to be one of them—the more so that some of our cotemporaries have avowed their approbation of the procedure which has given rise to the trial reported in the pamphlet.

Some months since, we heard reference to the excitement which had been created among the people of Buffalo by an attempt, on the part of the faculty of the Medical College established in that city, to introduce “Demonstrative Midwifery” into their course of instruction. Having ourselves enjoyed the benefit of such instruction while a pupil, knowing that it was still afforded to the students of this city, and accustomed to esteem it as highly important, we were not a little surprised to find it considered a novelty anywhere, and yet more to understand how it could be made a subject of popular odium. When, however, we came to be apprised that the *improvement* consisted in subjecting the process of parturition to *ocular* inspection in one of its stages, our surprise at the excitement yielded to astonishment that any teacher of the obstetric art should suppose it could be made the subject of the sense of vision, and mortification that the medical profession should have been placed in a position so well calculated to array public feeling in hostility to it. We never understood the full details of the case until we had read the report of the trial and the testimony of the witnesses. From this it appears that the professor supposed he had discovered that it was possible, by stethoscopic exploration of the abdomen of the pregnant female, to determine beforehand the probable presentation of the child at the time of parturition. To verify this discovery, he induced Mary Watson, an *unmarried* female, pregnant the second time, to submit first to this exploration by some, if not all, of the members of the graduating class under his direction. From the position in which the pulsations of the foetal heart were heard most plainly, the professor decided, and so announced to the class, that the presentation was one described as “occiput to the right posteriorly, face left anteriorly.” When the time for delivery arrived, the same woman was brought into a room in the college building, where she was fixed comfortably for her confinement, under the care of the wife of the janitor, who was to act as her nurse. The gentlemen who had previously made the stethoscopic exploration were now again summoned to be present during the labour, and one by one were permitted to make the usual vaginal examination. How often during the several hours of labour this was done by each, we are not told. Certainly, unless so frequently repeated by the whole body as very materially to annoy the woman, and interrupt the regular course of labour, but little knowledge could have been derived by each. If the progress was reported by

the professor or one of their number, they could derive no personal benefit from their presence in the chamber. Be this as it may, however, *one great error* appears to have been committed in this stage of the procedure. We were taught by one esteemed throughout the civilized world as no second rate master of his art, that such a presentation is faulty, and should be remedied in the *early* stage by bringing the occiput into such a position as would permit it to emerge under the arch of the pubis, while the face followed the curvature of the sacrum.

In the ardour of the professor for the new mode of diagnosis, he omitted this first duty of the accoucheur, and permitted the life of both mother and child to be put in jeopardy, through the necessary tediousness of the delivery by this false position. During all this time, however, the claims of modesty were regarded, the students maintained a proper decorum, and the woman lay covered on the bed. When, however, the head was about emerging, the clothing was so far removed as to permit the exhibition of the application of support to the perineum, and the manner in which the head issued was precisely such as had been foretold. She was then again covered, the cord tied, the placenta delivered, and the class dismissed. The woman appears as a witness in the case, and testifies that she recovered well, and has no complaint to allege of indecorous exposure or improper treatment. This we believe to be a plain, honest narrative of the events as they occurred, and we protest against every stage of the proceeding, and shall presently endeavour to justify our objections.

We do not design to enter at large into the question of morals, and yet we cannot allow it to pass wholly unheeded, as it has entered so largely into the local discussion of the case. We have no fear of placing ourselves in the position so contemptuously alluded to by the legal advocate of the faculty, and some of our scientific cotemporaries, nor are we disposed to abandon the defence of the superior moral tone of our own happy country over the older and more corrupt societies of Europe. One of the witnesses avers that "he doubts whether the morality of the French is any lower than in other countries. There is not that *cloak of hypocrisy* thrown around their actions that there is in this country." Now we have always been taught to think that "hypocrisy is the tribute paid to virtue by vice;" and that no stronger evidence of the prevalence of a low tone of moral feeling in any community can be found than the fact that virtue no longer possesses the desire to guard itself, or else has been stripped of the power to enforce the *homage of the cloak*.

We coincide in one thing only with the witnesses for the prosecution; and that is in the opinion that such an exhibition could have no effect in inciting "libidinous emotions." We cannot conceive of the degree of degradation in which such a result would be produced by the spectacle of the hour of nature's extremity. This would, however, be but a short-sighted view of the premises. The unnecessary exposure of those parts of our frame which have derived their common appellation from the natural instinct which prompts to their concealment, shocks the moral sensibility, diminishes the moral feeling, and debases the moral man. The knowledge of this fact has given rise to those enactments of common law by which the community protects itself from outrage by any who may have lost the sense of shame through familiarity with corruption, or who have not been endowed with proper moral sense; and medical men, we apprehend, should be the last to promote any measures which would abate this high sense of delicacy. Our intention, however, was to pass wholly unnoticed this point of the subject, and to devote our remarks entirely to the consideration of what we conceive to be the error of the case as regards medical education.

Even those witnesses who most earnestly commend the course of the Buffalo professor are careful (with, we believe, only one exception, which we shall notice presently) to declare that, however advantageous to the *pupil*, *ocular* assistance is never, or at most very rarely, resorted to by the practitioner in the walks of private life. Now it is not a little surprising that none of these gentlemen should have referred to a fact, well established and commonly known, that skill in practice is always proportionate to concentration of attention. It has been our lot, however, to have the opportunity of observing the progress of education of the blind. There experience has taught us that no pupils are so

slow in acquiring facility in reading by the fingers as those who have some lingering remnant of vision; the division of the attention between the two avenues of information produces distraction of thought, and obscures the impression. Now this we apprehend to be a parallel case, and the instinctive closing of the eyelids, which is so common an act of the accoucheur when making a vaginal exploration, confirms this view. If taught to depend, *in any degree*, on vision, whilst prosecuting his studies, the practitioner will feel strongly tempted to the same resort; and we much mistake the temper of the American woman, if such a violation of her sense of propriety will be tolerated. It is, indeed, in our remembrance that the very presence of a male practitioner in the house was scarce endured; and then only from consideration for the wishes of a husband or friends, to whom the life of the wife and mother was too dear to permit its being placed in jeopardy. Now we apprehend the most sturdy defender of "ocular demonstration" will hardly venture to assert that the risk of life can be at all diminished by that mode of observation. They all admit that they have practiced with success, and comfort to themselves and patients, without it. There seems, indeed, no little discrepancy between their views, when justifying the propriety of looking at the process, and when attempting to screen themselves from the charge of unnecessary exposure. In the one case, sight is represented as affording great advantage, while, in the other, they aver they saw nothing, or, what amounts to the same thing, the hand of the accoucheur holding a napkin to the perineum, and the hairy scalp of the child emerging from the pudenda. Now, if this was all that was seen, we would ask, what possible advantage could be derived from the inspection? For all purposes of interference or assistance, the labour is over, unless convulsions, or fainting, or suspension of expulsive effort should supervene, and neither sight, nor "second sight," nor clairvoyance, will render any aid in these circumstances. It is too late to effect any change in the position of the child's head in relation to the mother. However false those relations may be, its only course must be onward. This brings us to the consideration of some extraordinary fallacies which are repeated by several of the witnesses.

One compares the difference between the knowledge of the progress of the labour acquired by the touch without the sight to that which would follow from a verbal description of the watch in his pocket as compared with an inspection of an opened time-piece, and an ocular examination of its intricate mechanism. Another speaks of the difference between looking at the picture of a plough and having the instrument itself submitted to examination.

All this would be perfectly applicable to the difference between seeing and hearing in the case of insensible and inanimate bodies; but what can be seen through the abdominal parietes of the living woman, or the dense bones and muscles of the pelvis and the tortuous passage of the vagina? Literally, *nothing*. Hence the resort to machines, and mannikins, and paintings, by which the processes are *actually shown*, just as the experienced and accomplished teachers of obstetric science know, from repeated observation and careful study of the relations of the different parts to each other, they really exist.

By the study of the mechanism of labour, the measurements of the passages through the pelvic straits, the relations of the axes to each other and those of the head of the child in its various modes of presentation, and to other parts when they present, and the careful examination of the plates with which our works on midwifery are freely illustrated, we venture to affirm a more accurate knowledge may be acquired of the course of labour, and of the means by which it is to be assisted when assistance is needful, than by the witnessing of any conceivable number of such exhibitions as that which excited what we cannot but consider the proper reprehension of so large a body of the medical men at Buffalo. When the knowledge which can be thus obtained has been fixed in the memory, and tested on the machine, let the student be carried by his preceptor, or by some competent person to whom he can delegate the task, and permitted to acquire the confidence in his knowledge which can only result from its actual employment at the bedside of the patient. Let him, with all the decorous observances which were so carefully instilled into their pupils by the fathers of obstetric science, "take a pain," measure the capacity of the pelvis, deter-

mine the presenting parts, and the adaptation of the passages to permit the extrusion of the fetus, and, without the violation of his own sense of propriety, or the delicacy of the female, he will become "an expert" in ministering to the relief of those whose pangs demand our sympathy, and should command our respect. Twenty-five winters have passed over our head since first we were inducted into the practical application of the knowledge thus acquired. In those years we may safely say that almost every possible complication of labour has been presented to our notice—often, too, requiring the aid of older and more skilful operators—and never, in that whole period, has a case occurred in which it became proper or necessary to resort to any other sense than that of touch. We know, moreover, that we do not err when we assert that such is the opinion and experience of those who hold the highest position in obstetrical practice in this city; and we feel no hesitation in challenging, for the professors of that branch in our two principal institutions for medical teaching, an equality with any rival teacher, whether at "Giessen," "Prague," "Amsterdam," "Dublin," or "Paris."

We have not yet, however, reached the conclusion of this review. We have alluded to the testimony of one witness as being singularly liable to exception, and therefore deserving of especial notice. We feel peculiarly reluctant to condemn the evidence given in this instance, since it is offered by the only witness with whom we can claim the privilege of personal friendship. We cannot, however, permit even this consideration to warp our judgment in such a case. We allude to the testimony of the Professor of Obstetrics in the College of Physicians and Surgeons of the city of New York. The institution we honour—the man we esteem; and we dwell with grateful recollection on the noble stand they have taken in support of the cause of medical reform. We found it almost impossible to believe that from such a quarter the assertion should proceed that he approves of the practice of "ocular demonstration" in obstetrics applied to the living female, and would be glad to see it established in his college to-morrow! "It is often," says the Professor, "necessary to turn the child in the uterus. In turning the fetus, it has been *his practice to expose the woman entirely*. Does not recollect of ever taking but three of his students with him on such occasions. Would have no objections to students being present—not at all. Would prefer it, if practicable. On such occasions, *the woman is exposed, so far as clothes are concerned, ENTIRELY*." We will waive our objections to the tone of the greater part of the testimony of this witness, and ground our condemnation simply on the question, What possible aid can the eyes furnish? Can they detect the position of the feet of the fetus through the walls of the uterus and the parietes of the abdomen? Can they ascertain the contraction or relaxation of the womb, by the amount of which the time for action or quiescence is to be determined? Why expose the person of the woman at all? The doctor himself tells us "it would be just as improper to expose two inches below the collar bone as two feet, if it were unnecessary." Most gladly would we learn in what consists the necessity for the exposure of *one inch* of the superficies. We should consider it quite as unnecessary as another part of the professor's proceeding, which consists, he says, in laying "the patient upon her posteriors upon a table, with the person entirely exposed." Truly, we cannot be surprised that he has found "turning the fetus a *very dangerous* and difficult operation—the life of the mother is often in danger." Surely, no diminution of that danger can result from the removal from the bed to the "table" with "the person entirely exposed." We think there must have been some error of the stenographer in this case, or that the professor intended to describe his manipulations with the machine and mannikin, in which event we should think his conduct most praiseworthy. Throwing off not only "all covering," but the insensate leather which represents the abdominal muscles and anterior parietes of the uterus, he would very properly and greatly to their advantage exhibit to his class the manner in which he would search for and seize upon that foot which would exert traction in the proper line, and then permit them to witness the beautiful evolutions of the child in obedience to his skilful effort—nay, we hope he would go still further, and, calling upon the students one by one, would encourage them to practice with their own hands

that which he had thus instructed them to accomplish. We would fain recall to his remembrance the modest suffusion of face with which our much honoured and loved James presented to his class, when side by side we occupied the hard benches of our alma mater, the inanimate body of some despised woman, for whom no one had cared either living or dead—the grave decorum with which even the “machine” was deposited on the table—and then ask him which course was most likely to produce in the mind of the pupil the appropriate condition of feeling, when called to perform the delicate services which are required in those rooms from which *every ray of light is so sedulously excluded* before the male obstetrician is admitted within its precincts. If anything can bring about the recurrence of those days when modest women refused scientific assistance, and intrusted their own lives and the happiness of their husbands and children to the hands of ignorant midwives, it certainly is the prevalence of such sentiments and practices as those advocated by the Professor of Obstetrics in the College of Physicians and Surgeons of New York. We hope to find him repudiating the report of his testimony.

In closing this article, we would repeat the expression which has fallen from us incidentally at an earlier period of our remarks. The great error into which we are now invited is the transferring all medical instruction from the office of the actual practitioner to the class-room of the lecturer and demonstrator. There must be in this, as in all the other pursuits of life, a subdivision of labour. While principles are to be instilled in our colleges, and the student furnished with those rich stores of knowledge which have been acquired by the thought and experience of learned teachers, the practical application of those principles belongs certainly to the private preceptor.

C. M.

ART. XXIII.—*The Principles and Practice of Dental Surgery.* By CHAPIN A. HARRIS, M. D., D. D. S., Professor of Principles and Practice of Dental Surgery in the Baltimore College of Dental Surgery, Fellow of the Am. Soc. of Dental Surgery, &c. &c. Fourth edition, revised, modified, and greatly enlarged. With 200 illustrations. Philadelphia, Lindsay and Blakiston, 1850: pp. 803, 8vo.

THIS work of Dr. Harris has the qualities and enjoys the reputation of a standard text-book in the profession. Its popularity has within a very short period exhausted the three previous editions, and the rapid advancement of dental science makes frequent republication necessary in order to give place to the new matter demanding insertion. Dr. Harris is justly held to be eminently qualified for the important post of professional authorship, and he has devoted his fine talents and large attainments to this duty with an industry and enthusiasm which are sure to keep him abreast of all real progress in discovery and improvement. This edition, we observe, is enlarged by the addition of forty-five new engravings, and four new chapters on filling teeth and mechanical dentistry. The table of contents intimates a thoroughly scientific method as well as great comprehensiveness in the range of subjects embraced, and the body of the work fulfils this promise by a rare union of excellence and completeness in practical detail with philosophic truth in theoretical discussion. By the way, we could not help being again impressed, as we looked over the various array of topics which the book contains, with the necessity of giving to dentistry the rank and responsibilities of a separate profession. Here we have the anatomy, physiology, and pathology of the teeth, mouth, and nearly related organs produced in a manner at once minute, profound, and comprehensive; and their therapeutic treatment exhibits all the qualifications of the physician and surgeon. Besides, there is the large department of mechanical dentistry which makes room for the best faculties of artistic taste and skill of handicraft. It is, moreover, matter of no little pride and pleasure that we notice the frequency and importance of the contributions to dental science which the work credits to native talent. American dentistry seems to be earning for itself an enviable rank in the world's regard for services rendered to

the general cause of science, and the devotion of such men as our author, and a goodly number of honourable names besides, to the improvement of the profession by all the means and appliances of progress, are ample security for both its rapidity and permanence. The engravings are not only very numerous, but very good; and, if we may judge from their clear and satisfactory teaching to the eye, they must greatly enhance the value of the work. No pains or expense seems to have been spared in the illustrations, materials, or style of the book. We make no extracts, and specialize no points of principle or practice in the work, for it needs no such introduction *now* to the professional public. One thing seems lacking, however, in the work, and we recommend it to the author's attention in the next edition: to wit, the effects of *tobacco* on the teeth and gums, and, if he please, the *general* health besides. Directly opposite opinions are held, or at least *pretended* alike by men in the profession and those who are only in the *practice*, and the decision of the question is of importance for more reasons and in more ways than one. Dr. Harris is every way qualified for the investigation, and, understanding that he has been some time engaged in experimenting upon the point, we hoped to find the result in the work before us; but we confess to some surprise as well as regret in our disappointment.

If the Dr. *choose*, we will be obliged to him for the amendment we ask.

E. T.

ART. XXIV.—*Materia Medica and Therapeutics; with ample Illustrations of Practice in all the Departments of Medical Science, and very Copious Notices of Toxicology, suited to the Wants of Medical Students and Practitioners.* By THOMAS D. MITCHELL, A. M., M. D., Professor of the Theory and Practice of Midwifery in the Philadelphia College of Medicine, etc. etc. 8vo. pp. 736. Philadelphia: Lippincott, Grambo and Co., 1850.

THIS is, strictly speaking, a treatise on the curative properties and modes of administration of the several articles composing the *materia medica*, interspersed with remarks on their therapeutic application, and a history of the poisonous action of those most liable to exhibit this effect, with directions for its proper management when it occurs.

The work presents in the main a very fair exposition of the remedial effects of the various therapeutic agents in common use, and of the leading circumstances of disease under which their curative powers are exhibited. The author's therapeutical views will in general be found to be correct, and his estimate of the value of the different remedies to be in accordance with the recorded observations of the best practitioners. In a few instances, it is true, he has failed to notice all the circumstances under which certain articles of the *materia medica* have been found to exert an important curative influence, and in consequence of his having adopted an alphabetical arrangement, occasionally the particular stage and condition of disease to which the remedy described is appropriate are not pointed out with that clearness and precision which are essential to enable the student especially, to understand its proper therapeutical application.

Notwithstanding these defects, and perhaps the neglect of a few important authorities of our own and other countries, in reference to the remedial powers, and best plan for the administration of certain remedies, the work is still highly creditable to the abilities, professional skill, and industry of the author. To the student it will communicate a correct general outline of the *materia medica* and of therapeutics, while the physician also may consult its pages with the certainty of deriving from them much useful practical information. For, though the work cannot be viewed as a complete or perfect treatise on either of the branches embraced in it—still, all that it does teach bears the impress of truth, and is adapted to lead, generally speaking, to correct views of the *materia medica*, and of their proper therapeutic employment.

D. F. C.

QUARTERLY SUMMARY

OF THE

IMPROVEMENTS AND DISCOVERIES

IN THE

MEDICAL SCIENCES.

ANATOMY AND PHYSIOLOGY.

1. *On a new Form of Smooth or Non-Striated Muscular Fibre.*—Prof. KÖLLIKER describes the smooth muscles as composed of short, isolated fibres, each containing a nucleus. He calls them muscular or contractile fibre-cells, and gives three varieties:—

1. Short, round, spindle-shaped, or rectangular plates, like those of epithelium, $0.01''$ long, and $0.006''$ broad.

2. Long plates of irregular, rectangular, spindle or club-like shape, with fringed edges, $0.02''$ long, and $0.003''$ broad.

3. Narrow, spindle-shaped, round, or flat fibres, with fine ends which are either straight or wavy, $0.02''$, or even $0.25''$ long, and $0.002''$ to $0.01''$ broad.

The first and second of these forms are only to be found in the walls of vessels; the first may be mistaken for the cells of epithelium.

These muscular fibre-cells are composed of soft light yellow substance, which swells in water and acetic acid, in which last it becomes of a paler colour. There is no appreciable difference between the outer and inner parts, though in acetic acid it would seem as if each fibre-cell had a delicate covering. Their substance is homogeneous, with longitudinal stripes; and they often contain small pale granules, sometimes yellow globules of fat. Each fibre-cell has without exception a pale nucleus, sometimes only perceptible in acetic acid. Its form is peculiar, being like a small staff rounded at each end. The substance of the nucleus is homogeneous; its length is $0.006''$ — $0.004''$; its breadth $0.0008''$ — $0.00013''$. The muscular fibre-cells lying side by side or end to end, form the smooth muscles as they appear to the naked eye. They may be divided into:—

1. Purely smooth muscles containing no other tissue: such are those of the nipple, corium, of the interior of the eye, of the intestines, of the perspiratory glands of the axilla, of the cerumen glands of the ear, of the bladder, of the prostate, of the vagina, of the small arteries, of the veins and lymphatics.

2. Mixed smooth muscles, which contain, besides the muscular fibre-cells, cellular tissue, nuclear fibre, and elastic fibre: such are the trabeculae of the spleen and corpora cavernosa of both sexes. They are also found in the tunica dartos, gall-ducts, the fibres of the trigonum vesicae, the circular fibres of the larger arteries and veins, the long and transverse fibres of the prostata, urethra, Fallopian tubes, and of the womb; they change by imperceptible transitions into the first form; this is the case in the trachea, bronchi, urethra, the inner muscular layer of the testicles, seminal ducts, &c.

Kölliker says, that he has found smooth muscles in the skin to a far greater extent than is generally supposed. In the subcutaneous cellular membrane of the scrotum, penis (prepuce), and the anterior portion of the perineum, they are well developed. The greater number seems to exist in the tunica dartos;

in the perineum and prepuce there are fewer. In the tunica dartos, they form a muscular coat resembling, on a small scale, the tissue of the bladder. In the nipple and areola (especially in the female), the smooth muscles are strongly developed, somewhat resembling those of the tunica dartos, but having no fibrous covering. In the areola, up to the base of the nipple, they are arranged in circular order; in the nipple, they are circular and vertical, the ducts passing between them. Some lie in the corium and form the corpus reticulare; others belong to the subcutaneous tissue. Smooth muscles are also found in every part of the body covered with hair, in the hair-bulb, and in the upper portion of the corium. In the parts not covered with hair, such as the palm of the hand, the smooth muscles are wanting. One or two bundles of muscular fibre encircle each hair-bulb or sebaceous gland. Kölliker remarks that the tensor choroideæ does not insert itself into the processus ciliaris, but that it lies flat on its anterior surface, and that it arises from the canalis schlemmii. The sphincter pupillæ, he says, may be easily seen in the eye of the white rabbit, and in the blue eye in man, on removing the uvea. In man it is $\frac{1}{4}$ " broad, and forms the pupillar edge of the iris. He has also observed a muscular ring near the annulus iridis minor. The dilator pupillæ does not form a continuous membrane, but seems to consist of isolated bundles of fibres passing between the muscles to insert themselves in the edge of the sphincter. He has never seen the anastomosis of these fibres mentioned by Todd and Bowman. The writer thinks that the elements of all these muscles are smooth muscular fibre, though he admits that he has seldom succeeded in isolating the muscular fibre-cells in the human body. He does not think that the *M. cochlearis* discovered in the ear by Todd and Bowman deserves the name of a muscle; he is rather disposed to consider it as a ligamentous structure, and calls it the *ligamentum spirale*; he looks upon it as a means of attachment for the *zonula membranacea*. Remarking that the smooth muscles of the intestines resemble one another in their histological characters, he points out one peculiarity, viz., that they present a knotty appearance with ends running out into fine spirals. He thinks that it is not improbable that the knots are due to a contraction of the fibre. The fibre-cells of the intestine seem to be striped as if they were composed of an envelop and some homogeneous striped contents. No nuclear fibre is found among them, but they are covered and bound together by cellular membrane.

The small perspiratory glands seldom possess smooth muscular fibres, although these are always present in the large perspiratory glands of the axilla, and in the cerumen glands of the ear.

Kölliker does not admit the presence of muscular fibre in the lacteal glands.

In the lungs, he finds that the structure of the small and large bronchi is the same. Outside of the epithelium, they present a layer composed of longitudinal fibres of areolar tissue, and a number of strong, fine elastic fibres. Then follow one or more circular layers of smooth muscular fibre, with some nuclear fibre running transversely; lastly, a layer of cellular tissue, with nuclear fibre. He never could find muscular fibre running longitudinally through the bronchi. With respect to the vesicles of the lungs, he could come to no satisfactory conclusion. Long nuclei are seen in the walls of the vesicles, but they are not so long and narrow as those of the smooth muscles, and appear to him to belong to the capillaries. The smooth muscles of the trachea and bronchi resemble in their elements those of the intestines. In the ox, the gall-bladder, the ductus cysticus, d. choledochus, and the ducts lying out of the substance of the liver, present a large amount of muscular fibre of the smooth species. It is strongly developed in the canals, in which it is so disposed longitudinally; in the gall-bladder this is not so much the case, a transverse, and even an oblique layer of fibres being placed between the two longitudinal layers. In the human body, the muscular structure is very faintly developed in the gall-ducts. Kölliker could only discover a very delicate layer at all approaching muscular fibre. In the pancreatic ducts of the human body, no trace of muscular fibre exists. In the lachrymal apparatus, there are no muscular fibres; in the ductus stenonianus, none; the ductus whartonianus has a very faint layer of smooth muscular fibre.

No part of the internal structure of the kidney shows traces of muscular

fibre; it is only in the calices and pelves that it becomes apparent. The muscular fibres of the pelves and calices are composed of an outer longitudinal coat, and an inner transversal layer; they are continuations of the same in the urethra, and all partake of the general characters of smooth muscular fibre. Supposing the disposition of the muscular fibres of the bladder to be well known, the writer observes that the trigonum vesicæ consists of a pretty strong layer of pale yellow fibres immediately under the mucous membrane; this is to be considered as an expansion of the longitudinal fibres of the urethra.

The canaliculi of the testes have no muscular fibres, but on the inner side of the interior surface of the tunica vaginalis communis, smooth muscular fibre is evident. The vas deferens presents a thick layer of smooth muscular fibre, forming an outer longitudinal, a middle transverse, and an oblique layer directly under the mucous membrane. The canaliculi of the epididymis present the same conditions of their walls as the vasa deferentia. Kölliker thinks he has seen some muscular fibres in the body of the epididymis. The ductus ejaculatorii are formed like the vas deferens; the seminal vesicles present also the same conditions. Both coverings of the prostate that derived from the seminal vesicles, and its own peculiar covering, are more or less muscular.

The pars membranacea urethræ possesses but little smooth fibre, compared with the prostate. Under the mucous membrane (whose cellular tissue is rich in elastic or nucleus-fibre) there is a layer of longitudinal fibre, mostly composed of fibro-cellular membrane, containing nuclear fibre and contractile fibre-cells; this layer is succeeded by another of transverse fibre belonging to the musculus urethralis; it also contains smooth muscular fibre. In the pars cavernosa urethræ the fibres are but slightly developed; but they are still found at a certain depth.

The corpora cavernosa may be considered as highly developed muscular structures, furnished with peculiar blood-vessels, since the smooth muscular fibres exist in the fibrous septa even in the glans.

The inner portions of the uropoietic viscera in the female resemble those of the male with regard to their structure. The urethra has, besides the longitudinal fibres, a transverse layer of smooth muscular fibre. The Fallopian tubes have a thick middle layer of longitudinal and transverse fibre; the elements of which are smooth muscular fibre-cells, with moderate-sized nuclei. The smooth muscular fibre is with difficulty isolated in the virgin state; but in the gravid uterus it is seen in great perfection. In the fifth month, Kölliker saw bundles of red fibre of the smooth muscular kind, mixed with cellular membrane, without nucleated fibre; the fibre-cells were spindle-shaped, and very long. As pregnancy advances, no new cells seem to form; but those already formed increase in size. Sometimes they measure $\frac{1}{10}$ '''— $\frac{1}{4}$ '''; they are spindle-shaped, and run out into long, thin tails. After birth, they rapidly decrease in size. The middle or vascular layer of the uterus is rich in smooth muscular fibre; it differs only from the inner and outer coat, in the fibres crossing each other in every direction.

The ligamenta uteri anteriora et posteriora present a red fibrous tissue, enclosed in the two folds of the peritoneum; in this, smooth muscular fibre may be traced. In the ligamenta ovarii, very few are found. The ligamenta rotunda contain smooth muscular fibre: during pregnancy, they swell; and then the fibres seem to increase in size. The writer says he has seen muscular fibre in the lower portion of the anterior fold of the peritoneum; on the ligamenta lata these fibres expand between the folds, and he even thinks that they insert themselves in the walls of the pelvis. Directly under the mucous membrane of the vagina, a layer of muscular fibre exists stretching from the bottom of the vagina to the vestibule, and containing a thick plexus of veins; it is composed of longitudinal, but more especially of transverse, long fibre-cells with wavy ends. The structure of the clitoris, glans clitoridis, bulbus vestibuli, &c., is analogous to that of the corpora cavernosa in the male.

In the spleen of the human body, Kölliker has never been able to discover smooth muscular fibre, either in its covering, or in the larger fibrous bands; but in the microscopical fibrous bands he has found elements which he thinks are of a muscular nature. He also states that in birds, reptiles, and fishes he

has found some muscular fibre in the fibrous bands of the spleen. The existence of smooth muscular fibre in the blood-vessels and lymphatics is indubitable; Kölliker recommends the middle-sized arteries and veins for examination. In the aorta and trunks of the pulmonary arteries, the middle coat is composed alternately of muscular and elastic membrane, with fibro-cellular tissue. These muscles consist of fibre-cells, containing nuclei. The larger veins of the human body present, externally to their lining, a single or double layer of elastic fibre, a simple coat of transverse muscular fibre-cells, mixed with cellular tissue, to which succeeds externally a coat of longitudinal fibres. In the middle-sized veins, there is a middle coat of a pale reddish colour, composed of alternate transverse and longitudinal fibres; the former are of fibro-cellular tissue, and contractile fibre-cells. Towards the periphery, the muscular structure decreases. The veins of the uterus, which in the unimpregnated state present no peculiarities, acquire a great development during pregnancy with regard to length and organization. This does not so much proceed from the thickening of their walls as from the increasing size of the fibre-cells existing in the middle coat before pregnancy, and in certain changes in the outer and inner coat caused by their acquiring a considerable quantity of smooth muscular fibre. The very large veins which pierce the inner muscular coat of the uterus at the point of attachment of the placenta, and which communicate with its uterine portion, make an exception to this rule, as they have only longitudinal muscular coats, which with the epithelium form the walls of the vein.

The following veins have no muscular structure:—

1. The veins of the uterine portion of the placenta.
2. The veins of the cerebral substance, which are formed of epithelium and cellular membrane.
3. The sinuses of the dura mater.
4. Breschet's veins of the bones.
5. The venous cells of the corpora cavernosa in the male and female.
6. Probably the venous cells of the spleen. The muscular fibres of the lymphatics are like those of the veins; they exist sparingly in the trunks, and in greater number in the smaller branches.—*Kölliker and Siebold's Zeitschrift*, 1849.

[We have given this full analysis of Professor Kölliker's laborious researches on the new form of organic muscular structure discovered by him, on account of the importance which we attach to his results. It is obvious that the long fibre-cells, which he was the first to describe, constitute the simplest form of the proper contractile tissue of animals, save that nearly homogeneous nucleated blastema which seems to constitute a yet earlier stage in organic development. The lengthened non-striated fibre may be conceived to owe its origin either to the elongation or to the coalescence of these fibre-cells, as indicated by their persistent nuclei. And in the highest form of muscular fibre, the contractile power no longer exists in the original or parent-cells, but is delegated to the fibrillæ generated within them, each of which consists of a linear series of cells of much more minute size, probably holding the same relation to the series of parent-cells, of which the entire fibre seems to be composed, as the secreting-cells of a gland do to the follicle within which they are generated.]—*Brit. and For. Med.-Chirurg. Rev.*, July, 1850.

2. *Structure of the Membrana Tympani in the Human Ear.*—Mr. JOSEPH TOYNBEE, in a paper read at the Royal Society on the 20th June, describes the membrana tympani as consisting of the following layers, quite distinct from each other, both as regards their structure and functions.

1. Epidermis.
2. The proper fibrous layer, composed of
 - a. The lamina of radiating fibres.
 - b. The lamina of circular fibres.
3. Mucous membrane.

One of the principal objects of the paper is to describe the structure and functions of the fibrous laminae. Since the time of Sir Everard Home, who

pronounced the layer of radiating fibres to be muscular, anatomists have differed in their views of the nature of the fibrous element of the membrana tympani. The lamina of radiating fibres, the outer surface of which is covered by the epidermis, is continuous with the periosteum of the external meatus. With the exception of the uppermost fibres, which, on account of their being somewhat flaccid, have been considered as a separate tissue, under the name of "membrana flaccida," the radiate layer is composed of fibres which extend from the circular cartilaginous ring to the malleus, and they interlace in their course. These fibres are from the 4000th to the 5000th parts of an inch in breadth.

The lamina of circular fibres consists of fibres, which are firm and strong towards the circumference, but very attenuated towards the centre. These fibres are so attached and arranged as to form a layer of membrane which, in a quiescent state, is saucer-shaped. The fibres composing the circular are smaller than those of the radiate lamina, being from the 6000th to the 10000th part of an inch in breadth.

The facts that appear to be adverse to the idea of the fibres of either layer being muscular are:—

1. The absence of distinct nuclei in the fibres.
2. Their great denseness and hardness.

The four laminae forming the membrana tympani are continuous with the other structures, of which they appear to be mere modifications, and not one is proper to the organ.

The tensor tympani ligament, which had not been previously noticed by anatomists, is particularly described by Mr. Toynbee in the paper read before the Royal Society. It is attached externally to the malleus, close to the insertion of the tensor tympani muscle, and internally to the cochleariform process.

The latter part of the paper is occupied by observations on the functions of the fibrous laminae, and of the tensor ligament of the membrana tympani; and it is shown that by these two antagonistic forces, the one tending to draw the membrana tympani outwards, the other inwards, this organ is maintained in a state of moderate tension, and is always in a condition to receive ordinary sonorous undulations.—*London Journ. Med.*, Aug. 1850.

3. *Structure of the Liver.*—Professor RETZIUS has examined the liver in the human being, in the dog, cat, rabbit, squirrel, pig, and ox; and his researches have been, on the whole, confirmatory of the views of Mr. Kiernan. He has, some time since, stated his opinion that the liver is originally acinose or lobular, but that, by various changes, the acini or lobules may become confused; but they may regain their distinctness, under favourable circumstances. A portion of the liver of a child six months old was examined. Before injection, the lobules were distinct; but in the injected preparation, where the capillaries were entirely filled, there was no trace of interlobular partitions nor of cellular alveoli. The lobular structure was only shown by the white injection (white-lead), which was forced through the hepatic veins and their lobular branches into the central capillaries of the acini. The acini were thickly surrounded by an abundance of capillaries from the portal vein; but even these did not indicate any distinct limits to the acini. In many places, the lobular capillary network was entirely filled by the injection thrown into it from the portal vein. It was evident from this specimen, that already in the sixth month after birth, the portal venous system, which has during intra-uterine life formed a part of the umbilical venous system, possesses a development far surpassing that of the hepatic vein. In large patches, especially in the right lobe, the injection, which was thrown into the portal veins, occupied the whole of the parenchyma, with the exception of the network of the hepatic ducts, and the central vessel. In other places, the injection had not passed into the finer portal twigs; while the twigs of the hepatic artery, and the adjoining capillaries, were well filled. These arterial twigs gave a lobular or acinose appearance to this portion of the organ. This was especially the case at the surface, where the round ends of the intralobular vascular plexus were raised in the form of small white knots.

The circumference of these lobules was partly uninjected, partly occupied by the network of the hepatic ducts. In the parts which the perilobular injection had not reached, there was an appearance of lobules with large interspaces; but where it had perfectly penetrated, the smaller interlobular plexuses were entirely effaced. Where a longitudinal section had been made through the lobules, they were found, as Kiernan had represented, thickly set on the intralobular (sublobular) twigs, like sessile leaves, surrounded by a portal and biliary capillary network.

Especially interesting, in a well injected preparation, are the ultimate sheaths of Glisson's capsule, which follow the ramifications of the portal vein through the entire organ, until it gives off its perilobular twigs. Professor Retzius has been able to determine a remarkable fact, which Mr. Kiernan, though he had systematically rendered it probable, had not so successfully described—that the biliary ducts form a network in the walls of this sheath, continuous with that in the lobules. The vessels surrounded by this sheath are, a pretty large portal twig, a somewhat smaller twig of the hepatic duct, and a small twig of the hepatic artery. These Glissonian sheaths appear to be situated where one would expect to find the perilobular septa. When the hepatic ducts are well injected, the sheaths are seen like rings, having the colour of the biliary ducts, with their walls covered or interwoven with a capillary biliary network, of as fine meshes as the lobular network. Mr. Kiernan has without doubt seen this, and described it under the name of "vaginal branches" and "plexus." From this vaginal plexus a network of biliary ducts proceeds in all directions, becoming interwoven throughout with the capillary vascular network; it also penetrates into the lobules. The only circumstance in which Professor Retzius differs from Mr. Kiernan, is that the latter describes as twigs or branches the extension of the biliary ducts, while it is in fact a network, in which neither stems nor branches can be distinguished.

The principal results at which Professor Retzius has arrived from the above examination, and from similar examinations of the liver in the lower mammalia, are the following:—

1. That the liver is originally lobular; but that the lobular structure may undergo various changes, and present various appearances of development. There may be confusion of the lobules, in conjunction with more or less regular development of the ramifications of the hepatic vein. That which is most in favour of the presence of the lobular type is the constancy of the alveolar biliary network.

2. That the perfect biliary ducts, with their peculiar walls (the basement membrane of the English anatomists), without which they could not be perfectly injected, are regularly disposed tubes. Professor Retzius has also been able to directly determine the presence of this membrane; and has found it, as described by Schroeder van der Kolk, a simple membrane, surrounding the angular as well as the round hepatic cells. This basement membrane may be rendered apparent by macerating a liver in ether, then drying it, and cutting extremely thin slices. These become transparent when laid in water, and exhibit the proper membrane of the finest biliary network in single outline, surrounding the cells.

3. That no arterial network has been found in Glisson's capsule. The regular distribution of twigs from the portal vein and hepatic artery was not perceptible; but the perilobular vessels chiefly appeared as a network; and there appeared no regular or perilobular type in the larger twigs. In two other specimens from children of three years old, elegant hexagonal lobules were seen. In one of these, the injection of the hepatic artery had succeeded remarkably well. Besides the fine long twigs on the surface, each lobule had its own perilobular capillary network, of extreme fineness; but in none of these was the network of the portal vein so distinct, as the injection had penetrated into the network of the lobules, so that the periphery became less distinct. In one of these preparations, the perilobular part of the portal vein was seen giving off triradiate angular branches (*dreizweigige Eckenzeige*), as well as the regular peripheral twigs.—*London Journ. Med.*, Jan. 1850, from *Müller's Archiv*. 1849, Heft 2.

4. *A newly-discovered Anastomosis between the Vena Porta and the Vena Cava Inferior.*—M. CLAUDE BERNARD describes the following vascular arrangement which he has discovered, and the use of which he states to be the direct mingling of the abdominal portal blood with the systemic venous blood. Immediately after the portal vein has entered the liver, frequently a little before that, a certain number of branches are detached, and are distributed, some superficially, some more profoundly, in the substance of the liver to the right of the vena cava. The greater number of these branches ramify on the external surface of the vena cava, where, however, they do not constitute *vasa vasorum*, but instead of becoming subdivided into capillaries they abruptly enter the cavity of the vein; either singly, or by the union of several, forming a dilatation or common reservoir which communicates directly with the interior of the vein. These anastomotic vessels are devoid of valves. The walls of these vessels partake of the structural characters of the vena porta; while the branches of the sub-hepatic veins exhibit very distinctly the muscular structure of the hepatic portion of the vena cava inferior. The orifices of these portal vessels are further distinguishable from the sub-hepatic veins by their regularity and their longitudinal direction with regard to the muscular fibres of the vena cava inferior.

This system of direct communication between the vena cava and vena porta does not exist only at the entrance of the liver, but is seen equally extensively in the depth of the organ and on the larger trunks of the hepatic vein, especially in the neighbourhood of their insertion into the trunk of the vena cava inferior. These vessels, M. Coste observed, constitute a true collateral hepatic circulation.—*London Med. Gaz.*, June, 1850.

5. *Influence of Puncture of Medulla Oblongata on the Appearance of Grape Sugar in the Urine.*—Dr. BRINTON brought before the Pathological Society of London (May 20th, 1850), the results of an operation of M. Claude Bernard, who has discovered that puncturing the medulla oblongata on the middle line of the floor of the fourth ventricle, or between the roots of the vagus nerves, gives rise to the appearance of grape sugar in the urine. During a recent visit to Paris, M. Bernard, with great kindness, repeated this and other important experiments in his presence. The pathological interest of the fact, as well as its extraordinary character, led Dr. Brinton to think that the Society might be interested in having it confirmed in their presence. The steps of the operation were detailed to the Society, and illustrated by the skull of a rabbit. Several specimens of urine from a rabbit thus operated on were exhibited to the Society, and in these it was seen that the copper test, which before the operation afforded no precipitate, gave a very copious one immediately after; and that, after enduring several hours, this saccharine state of the urine gradually disappeared. A rabbit was also shown which had been operated on about two hours before the meeting, and whose urine exhibited a copious orange precipitate of the suboxide of copper. A satisfactory, but less copious, precipitate was also obtained from a very small quantity of the secretion taken from the animal while before the Society.

Dr. Bence Jones urged the insufficiency of the copper test. It was evident the operation produced a change in the urine; but he thought the presence of sugar not proved.

Dr. Brinton disclaimed implicit reliance on any single test. M. Bernard had equally assured himself of the presence of sugar by the incontestable proof of fermentation.—*Ibid.*

6. *Determination of the Place of Fecundation in the Superior Vertebrate Animals.*—M. COSTE read to the Academy of Medicine of Paris (June 3d, 1850) a note on this subject, in which he disputed the opinion at present generally held by physiologists, that the ovum, spontaneously discharged, may be fecundated by coming in contact with the semen at any point between the ovary and the external orifice of the uterus. This opinion, M. Coste observed, had been received too readily, on account of its harmonizing with the modern theories of spontaneous ovulation. It has not been noticed, M. Coste remarked, that the ova lose

their integrity at the distance from the ovary that they are said to be capable of fecundation. In order to determine this point, M. Coste had examined the ova of birds and mammalia from ten to twelve hours after their discharge from the ovaries, and had found that those present in the Fallopian tubes, and not fecundated, exhibited evident signs of commencing decomposition. If, then, argued M. Coste, after so short a residence in the tube that they had not traversed the first half of its length, the ova already showed signs of decomposition, it is clear that they can no longer be susceptible of fecundation by contact with the seminal fluid.

M. Coste deduced from his observations that fecundation can only take place at the ovary, the mouth of the Fallopian tube, or in the first third of that canal.—*Ibid.*

7. *Force of Fecundity in Phthisical Subjects.*—Dr. W. H. WALSH, Professor of Medicine in University College, London, with the view of contributing to the solution of the problem, *whether the tuberculous diathesis intensifies or weakens the force of fecundity in the female, and of the procreative faculty in the male*, has collected a certain number of cases of phthisis, carefully noting the number of years the individual had been married, and the number of children and miscarriages the patient herself had had, if a female, or had occurred in the person of his wife if he were a male. As essential elements in the inquiry, the age and the duration of illness at the time of observation were in each instance included. The number of cases amounts to 91; the greater part observed among the out-patients of the Consumption Hospital, when existing in embryo at Chelsea. This number is, doubtless, too small to furnish a final solution to the problem (especially as the investigation is beset with no small number of sources of fallacy), but, nevertheless, may be considered capable of furnishing results approximating to the truth.

It follows from the data which he has collected that the procreative power of phthisical males is below the average—the fecundity of phthisical females materially above it; and hence that, to whatever extent phthisis be a disease propagable from parent to child, the danger of its extension thus is greater from the marriage of tuberculous females than males. It may further be concluded that the tendency to early marriage, which Prof. W. formerly showed to exist in the phthisical of both sexes,* ought, in females, to be discouraged, especially if the researches of future observers should prove that the *phthisis of infants* (differing from that of adults) is, to any prominent degree, an hereditary disease. Early marriage was at one time supposed to be useful to the phthisical female herself; but accurate observation fails to warrant the idea.

But, taking the two sexes together, and regarding them as phthisical stock prepared to propagate, it is obvious that the female activity is counterbalanced, to a certain extent, by the male inactivity.

So that 11.82 years of phthisical cohabitation produce a mean of 0.83 children less than 17.48 years of non-phthisical cohabitation. At the phthisical rate of production, the produce would, in 17.48 years, equal 5.74 children, instead of 4.71, as in the non-phthisical series. This is somewhat above the real excess; still it must be admitted these facts go to prove that there is, to a certain amount, a greater tendency in tuberculous stock to multiply than in the population at large.—*Med. Times*, July 6, 1850.

8. *On the Mechanism of Textural Nutrition.* By RUDOLF HAAS, M. D., late lecturer on Epidemiology in Vienna.—The first step in the actual process of nutrition is, the attraction of the homogeneous part of the blood by the tissues.† The blood being contained in the vessels, that part only which transudes through their walls into the parenchyma of the organs can contribute to nutrition. Hence, even though a large quantity of rich healthy blood be circulating through the vessels, the textures will be imperfectly nourished, unless sufficient exuda-

*. Enc. Britan. Ed. 7; Art. Population, p. 423.

† Valentin's Physiologie, Band 2, Sect. 2068. Mueller's Physiologie, p. 75.

tion takes place; but nutrition will be restored so soon as an adequate quantity of blood is made to pass through the walls of the vessels. An excessive exudation of serum into the parenchyma, no doubt, likewise impedes nutrition, by producing pressure on the textures, and thus impeding their attractive power. That this is probably the case, may be inferred from the following considerations: 1. The evolution and nutrition of organs are impeded by pressure from without; and the same effect is no doubt produced by pressure from within. 2. The textures become atrophied, whenever they are pressed on by an adjoining part which has had its bulk enlarged by inflammation or other causes. 3. Inorganic processes are retarded by pressure; thus, crystallization can only take place when sufficient space is afforded. The organic processes, then, consisting in a selection and attraction of similar parts, have the greater need of sufficient space.

The process of nutrition may then be supposed to be modified by all those forces which cause an alteration in the quantity or quality of the blood effused into the parenchyma; or rather by those influences which affect the transudation of the nutritive part of the blood through the coats of the vessels. The forces which modify the exudation of blood through the coats of the vessels are the following:—

1. *The Quantity of Blood circulating in the Vessels.* The larger this quantity is, the more the vessels and their pores are distended, and more blood passes into the parenchyma, and *vice versa*. If a fluid be driven through an elastic tube, the latter will be distended in proportion to the force applied.

2. *The Quantity of the Blood-Corpuscles.* Many blood-vessels (*vasa serosa*) are of smaller diameter than the blood-corpuscles; and hence must be distended when they pass through them. It is incorrect, and quite in contradiction to physical laws to assert, with some physiologists, that the corpuscles are compressed and become elongated, in passing through these vessels. Being propelled by a *vis à tergo*, they must become broader, but never more slender. On pressing an elastic globe through an elastic tube, the former will not become thinner, but both will be distended. Hence, the more corpuscles there are in the blood, the more the vessels and their pores are distended.*

3. *The Energy of the Forces which Propel the Blood into the Small Vessels.* The capillaries and their pores are distended in direct proportion to the energy with which the blood is sent into them by the heart and large vessels. This may be demonstrated by forcing, with varied pressing power, a quantity of fluid through an elastic tube.

4. *The Temperature.* Within certain limits, a high temperature favours distension of the vessels, while a low one causes them to contract.†

We find, in the above principles, the explanation of many of the phenomena of health and disease.

I. The similarity between the symptoms of anæmia and those of hyperæmia is evidently accounted for. In both diseases, nutrition is interrupted; in anæmia, by want of blood; in hyperæmia, by its superfluity, which produces pressure on the tissues, and impedes their power of selection and assimilation. In hyperæmia, the vessels are over-distended, and too much blood passes through their coats into the parenchyma.

II. We find an explanation of the general organic weakness which is constantly observed in fevers. The heart being, in these diseases, too energetic in action, the vessels are over-distended, and an excessive quantity of blood is effused, producing effects similar to those which occur in hyperæmia.

III. The secretions, as the urine, sweat, and saliva, are impeded in fevers by this pressure of the blood on the textures. In spite of the presence of a large quantity of blood in their parenchyma, the organs are in want of material to furnish the secretions; for they require a large proportion of water, which is not afforded by the blood which passes through the pores of the vessels in a fibrinous state. Bruck's experiments show that a large proportion of water

* Haas (Dr.) Ueber die Function der Blutkörperchen. Oesterreichischer Jahrbücher, Jan. 1848.

† Valentin's Physiologie, band i. sect. 1086.

and soluble salts, and very little albumen, pass through small pores; but that through large pores, such as there are in fevers, there pass very little water and saline matters, and much albumen. The parenchyma of the secreting organs, then, contains very little water in fevers. This impediment to the secreting functions causes the retention in the blood of a large quantity of urea, saline matter, etc.; but after the fever had subsided, when the action of the heart has diminished, and the vessels are less distended, the quantity of blood is not only diminished, but becomes more watery: the secreting organs are stimulated to action by the matters which have been retained, and the blood is also more able to remove them. The urea and salts increase in the urine, producing a sediment, the appearance of which denotes a *crisis*.

IV. A diminution in the quantity of blood is the cause of the summer sleep of the amphibia. Berthold and Davy found the temperature of these animals always lower than that of the atmosphere; this is produced by the evaporation of water from their bodies increasing with the temperature. Hence, in a high temperature, the quantity of blood in these animals is much diminished by their losing a large quantity of water; and in circulating through the vessels, it does not distend them sufficiently to allow the nutritive part to exude. Nutrition, then, being partially suspended, the animals fall into a lethargic state. This explanation is in accordance with the fact that the amphibia creep into a hiding-place in dry, and awake in wet weather. They are not awaked by being carried into a cold room, but by being immersed in water.

V. A similar explanation will account for the fact that animals are unable to live longer than twenty days on dry food, without any fluid, while they can exist for fifty days when supplied with water alone, but in sufficient quantity. As long as the animals get no fluid, the blood loses water daily in the urine, saliva, sweat, and breath. This loss can never be repaired by dry food, for the stomach cannot digest a sufficient quantity. The blood, thus reduced in quantity, passes through the vessels without being able to distend them, and afford nutritive material, as in the summer sleep of amphibia. The want of water also causes a thickening of the blood, which co-operates with its want of power to distend the vessels. But if the animals are supplied with a sufficient quantity of water, without any food, they survive for a longer time. Although water contains no nutritive material, and cannot be transformed into nervous or muscular tissue, it nevertheless indirectly contributes to nutrition, by increasing the quantity of the blood. The vessels are sufficiently distended, and the blood passes into the parenchyma, and supports life longer, in spite of its possessing very low nutritive power.

VI. The winter-sleep of animals has its origin, like the summer-sleep, in an interruption to nutrition. The summer-sleep is caused by the loss of water; the winter-sleep by the diminished activity of the heart's action, consequent on the influence of cold. It has been found that, in hybernating animals, at the commencement of the winter-sleep, the pulsations of the heart subsided from 200 to 50 in a minute. The heart being thus weakened, is not able to propel the blood with sufficient force to distend the vessels, which are much more contracted in cold weather. In such circumstances, no blood passes through the pores into the parenchyma, nutrition is interrupted, and the animals fall into a state of asphyxia, losing the power of feeling and perceiving. The reason why some animals only are subject to hybernation is to be found in their various degrees of sensibility. Those whose heart is unable to resist the weakening influence of cold, are seized on by winter-sleep. This explanation is confirmed by the fact, that we observe young animals asphyxiated by a degree of cold, which they would bear with impunity if full grown. Legallois observed this in rabbits, six or eight weeks old.

The cold-blooded animals are also very soon overpowered by cold; but this is dependent on two causes. Not only are they more susceptible of the influence of cold, but their small quantity of blood acts at a disadvantage. The quantity of blood would be sufficient, if the heart acted with sufficient energy; but the heart's action failing, the blood merely circulates in the vessels, without being able to pass through their coats.

VII. The diminished activity of the heart, and the contraction of the vessels, in cold weather, explain why we are compelled to take a larger quantity of food in winter, or when living in a cold climate. We endeavour to supply the want of one force which contributes to nutrition, by increasing others—to make up for the insufficient action of the heart by increasing the quantity of blood. If a fluid be pressed through an elastic tube, its walls will be less distended as the force is diminished, but more distended if the quantity of fluid be increased. If the quantity of fluid be increased in the same proportion as the propelling force is decreased, the distension of the vessels remains the same. The degree in which cold impedes nutrition may be observed in the inhabitants of the frigid zones. They are stunted in growth; their bodies are short, their muscles thin, their senses obtuse, their mental faculties very weak, and the sexual instinct, the catamenial flow, and the fecundity, are much less than in other people. The same quantity of blood which is sufficient for nutrition in a warm climate is not so in a cold one. In the latter, also, the heart is less active, and the vessels more contracted. For effecting adequate nutrition, a certain quantity of blood must pass into the parenchyma; and if the heart cannot act with sufficient energy to propel sufficient blood to distend the vessels, the absolute quantity of blood must be increased: otherwise a general stinting of growth results.

As the blood is the carrier of animal heat, we encourage by increasing its quantity, and especially its penetration through the walls of the vessels, not only the nutrition of the tissues, but also the sensation of external warmth. We possess more blood in winter than in summer, and are hence more disposed to inflammation in the former season. We more easily, and for the same reason, bear a high temperature in the winter than in the summer. Warmth excites the heart's action, and promotes distension of the vessels; and if these at the same time contain much blood, congestions and inflammations are liable to occur.

The opinion of Liebig, that we are obliged to eat more in winter than in summer, because we inspire more oxygen, is not adequate to explain the facts above referred to: 1. According to Liebig, we possess in summer more blood than in winter, in which latter season the oxygen consumes more of the blood. If it were so, the tendency to inflammation ought to be greater in summer than in winter. 2. It ought not to be easier to bear a high temperature in summer than in winter. 3. Liebig's view does not explain why the amphibia and young animals become more easily asphyxiated in cold weather. The oxygen cannot have consumed a sufficient quantity in such a short time. 4. If an organ be subjected to the influence of cold, it loses sensation as if deprived of blood.

VIII. The same instinct which compels us to take more food in winter also invites us in the same season to make use of spirits. These, by exciting the heart to more frequent and energetic contraction, directly oppose the influence of cold, which weakens the heart, and prevents it from contracting with energy. By increasing the activity of the heart's action, spirits cause the greater distension of the vessels, and thus contribute to the nutrition of the organs. But, though to a certain extent equivalents to food, they never contribute directly to textural nutrition.

The protection which spirits afford against cold is produced by the diffusion of animal heat by means of the effusion of blood into the parenchyma. Liebig explains this phenomenon by the evolution of warmth from the combustion of spirits by the oxygen: but this opinion is liable to the following objections: 1. If the increase of animal heat by the use of spirits were dependent on this chemical action, the same quantity of spirits should produce the same amount of heat in all persons. But experience shows that this is not the case. Individuals, who are not accustomed to spirits, feel very warm, and even perspire on taking a small quantity, while those who are addicted to their use feel no effect from the same quantity. This agrees entirely with the statement above given, that the effect produced by spirits is the consequence of their stimulating action on the heart: 2. Spirits are never burnt at such a temperature as is generally found in animals: 3. They are expired generally by the lungs, and not therefore burnt: 4. Fat is likewise burnt as by the oxygen; and yet we do not feel warmer after making use of it.

In the preceding theory, we find the explanation of the fact that drunkards live on a small quantity of food. A small quantity of blood affords as much nutrition to them as a larger quantity to other persons; for, in consequence of their taking spirits, the heart propels this small quantity of blood into the small vessels with such energy, that they are as much distended by it as by more blood with the normal activity of the heart. After having abstained from spirits for some hours, the drunkard feels very weak, and is not better till he has again taken liquor. He does not feel strengthened by taking food, as other individuals do. The reason of this is his general anæmia. By the use of spirits the heart is caused to propel the blood forcibly, so as to distend the vessels, and the tissues are nourished. But the stimulus being removed, the activity of the heart subsides to its normal standard; the blood in the parenchyma is partly consumed by the tissues, partly absorbed by the lymphatic vessels. As the normal activity of the heart is insufficient to propel the small quantity of blood, the tissues are soon in want of food: hence the individual feels weak. But the simple use of food cannot strengthen him, because the quantity of blood cannot be restored with sufficient rapidity, as has been explained in my observations on the starving of animals by the use of dry food. The drinking of water or other fluids is more effectual than taking food. The quantity of blood is increased; and the vessels and their pores being distended, nutritive material is more exuded into the parenchyma. In this way we may explain the cure of delirium tremens by drinking a large quantity of water. The want of appetite in drunkards is a natural consequence of the chronic inflammation of the stomach.

IX. In the same manner as spirits, warmth supports animal life. Animals partially starved, and already insensible, can be roused by artificial warmth. After ten minutes, the animal rises up, takes food, passes fæces and urine; and is, during the application of warmth, lively and merry. Warmth excites the heart and distends the vessels; so that the blood, in spite of being reduced by fasting to a very small quantity, passes through the walls of the vessels more readily than before heat was applied. In this way the tissues obtain nutritive material; and the organs again recover their activity.

X. But animals die sooner after being subjected to artificial warmth than when left insensible. This is to be explained by the same remarks as I have made in speaking of summer-sleep, and of the starving of animals when restricted to the use of dry food. In all these circumstances, the animals die from the want of blood in the parenchyma, produced by the loss of water. For when awaked they part with a large quantity of water in the urine, sweat, and breath; all which secretions are, like the nutritive material, furnished by the blood. The blood is thus much more diminished than if the animals had been left in their state of asphyxia. Chossat asserted that pigeons which were undergoing starvation lost twice as much weight when roused by artificial warmth as when left quiet.* This is more the effect of secretion than of the process of nutrition.

XI. In the principles which I have laid down, we find an explanation of the changes which the blood undergoes under various circumstances. There can be no doubt that any impediment to the process of nutrition must produce an alteration in the blood in the vessels; for those materials which ought to be applied to nutrition, and transformed into different textures, remain in the blood. It being established that the quantity of blood in the vessels, the number of blood-corpuscles, the energy with which the propulsive agents in the circulation act, and the amount of temperature, produce modifications of the nutritive process, it is equally probable that they tend to alter the blood in the vessels.

In order to show what parts of the blood increase with the augmentation, and decrease with the diminution of nutrition, we must show what materials are subservient to this process. These are, besides some salts, fibrin and albumen. The corpuscles, being unable to pass through the walls of the vessels, cannot be considered as affected by the increase or diminution of nutrition.

The albumen and fibrin, though both subservient to nutrition, are destined for distinct purposes. The fibrin nourishes the tissues: but the albumen is

* Chossat. *Recherches sur l'Inanition*, p. 121.

transformed into fibrin and corpuscles. That the blood-corpuscles are formed from albumen, is proved by considering that they must be formed *in* the vessels, as they cannot pass through their pores; and as they are similar in composition to albumen, they are without doubt formed of it. That the fibrin is formed from albumen can be demonstrated by the following facts: 1. The chyle contains more albumen and less fibrin than the blood; consequently, a part of the albumen must have been transformed into fibrin. 2. The chyle, immediately after being absorbed by the lacteal vessels from the intestines, contains more albumen and less fibrin than that which has passed through the mesenteric glands. 3. Lymph contains much more fibrin, and less albumen, than blood-serum. But as the lymph is formed in the parenchyma of the organs from the blood-serum, which contains but little fibrin, the fibrin in it must be formed from albumen. 4. The arterial blood contains more fibrin, and less albumen than the blood in the veins; and this can only result from the transformation of the latter material into the former.

The albumen is therefore not only consumed for the purposes of nutrition, but is in a great measure transformed into fibrin and blood-corpuscles. Hence any increase or decrease in the quantity of albumen is not only dependent upon the various degrees of activity of the nutritive process, but also on the extent to which it is transformed into fibrin and blood-corpuscles. If this action be impeded, the albumen must, if it be restored by food, increase in quantity, in spite of the apparent performance of textural nutrition.

Fibrin differs from albumen, in its mode of reparation. Albumen is only restored by food; and if none be taken, the albumen is not renewed. But fibrin, being formed from albumen, is restored even if no food be taken. It is nevertheless to be remembered that the chyle also contributes a share to the formation of fibrin.

We are now able to point out some laws which regulate the increase or diminution of the albumen and fibrin.

The albumen increases: 1. When food is taken as before, if either the nutrition of the textures, or the formation of blood-corpuscles or of fibrin be impeded. In consequence of this, the albumen increases: (*a*) In chlorosis, where the formation of blood-corpuscles is impeded by the want of iron, or from some other cause. But if less food be taken than before, the albumen cannot be increased. (*b*) In many toxæmic diseases, as typhus, intermittent fever, bilious fever, &c., the poisons of these diseases in general impede the formation of fibrin;* and if the attack takes place on the same day on which food has been taken, the albumen will be restored by the chyle, and must increase. But if an animal be seized after fasting for some days, or if the blood be drawn three or four days after the toxæmic influence have first acted, we shall not find an increase of the albumen. The influence of food accounts for the albumen being sometimes in excess in chlorosis, and in toxæmic diseases, and sometimes in defect. 2. If, while the nutrition of the textures, and the formation of corpuscles and fibrin, are performed as before, more food is taken. In consequence of this, the albumen is increased in plethora.

The fibrin increases: 1. If, while it is being formed as before, nutrition is impeded. In consequence of this it increases: (*a*) In all inflammatory fevers, where nutrition is impeded by the violence of the circulation, but where no cause operates to retard the formation of fibrin, which is still formed from albumen, even though very little food be taken. (*b*) After bleeding, when nutrition is impeded by the blood not being in sufficient quantity to distend the vessels. This increase is only relative in proportion to the other parts of the blood; the loss of all parts has been equal, but the fibrin is soonest restored. The blood-corpuscles require time for renewal, and the albumen can only be supplied by food. (*c*) In abstinence, where the albumen is not restored by food, but the fibrin continues to be formed from albumen, the same phenomenon takes place as after bleeding. (*d*) In all diseases in which the blood-corpuscles are diminished, the vessels are not distended sufficiently to allow the fibrin to

* It does not follow that every poison impedes the formation of fibrin; for all poisons are not alike.

pass into the parenchyma of the various organs. This is the case in chlorosis, scirrhus, morbus Brightii, the latter months of pregnancy, and tuberculosis. Under all these circumstances, an access of fever determines an increase in the quantity of fibrin. 2. If, when the formation of fibrin continues to be performed as before, a large quantity of fibrinous food be taken. This is the result of an animal diet; for in this case, the chyle contains much more fibrin than when a mixed diet is used.

The albumen decreases whenever its expenditure is greater than its supply by the food. This takes place in fasting; where, though but little albumen passes through the coats of the vessels, it is consumed in the formation of fibrin and corpuscles.

The fibrin decreases only if its formation be impeded. This takes place in various narcotizations and poison-diseases, as poisoning by opium, hydrocyanic acid, typhus, miasma, etc.

It is here the place to refer to the causes of the increase or decrease of the blood-corpuscles in different diseases. We have first to point out how they are *spoiled*, in the healthy state. On this point, we have only hypothetical ideas; but, as it is established that the small vessels are distended by the passage of the corpuscles, an amount of friction must be exercised, which must tend to render the corpuscles unfit for use. It follows, that the oftener the corpuscles circulate through the vessels, the more they are spoiled; but this rule is not without exceptions. It may happen, that the corpuscles are often propelled through the vessels without being injured; this occurs if the walls of the vessels are soft and capable of yielding. In this case, the corpuscles must increase, if their formation be not impeded. They must decrease, if their formation be impeded, or the vessels be resistant, and the heart act more frequently. Hence they decrease in fevers, because the contractions of the heart are more frequent. They increase in typhus and other toxæmic diseases, where the vessels are yielding, which is denoted by the softness of the pulse; for, as the vessels do not resist the pressure of the finger from without, they cannot be supposed to oppose the pressure from within. This is the result of the action of the poison. If, however, the formation of the corpuscles be impeded, they decrease notwithstanding the softness of the vessels. This sometimes happens in chlorosis.

XII. From the preceding observations, we can understand the cause of the different characters of the exuded matter in inflammation and in congestion; the product of congestion being non-fibrinous, while that of inflammation contains much of this substance. Pathologists have ascribed this phenomenon to different *dyscrasies*, which, according to the preponderance of fibrin or albumen in the exudation, they have termed the fibrinous or albuminous dyscrasies. These are only hypothetical, and are incapable of demonstration, either *à priori* or *à posteriori*. The retention of the fibrin in the blood, and its free exudation through the pores of the vessels, depend, as I have already shown, on the state of distension of the capillary vessels, and upon the various substances which are mixed with the blood. If the blood contain substances which impede the formation of fibrin, as is the case in typhus and other toxæmic diseases, the fibrin must decrease, and the exuded matter cannot contain much of it. The amount of albumen in the exudations also depends on the distension of the vessels, and on the quantity in the blood. In cases where the blood has not been poisoned, the exuded matters will contain a quantity of fibrin, proportionate to the distensions of the vessels of the inflamed part. Hence all those causes which assist the distension of the vessels also promote the exudation of fibrin. In persons with much blood, containing many corpuscles, and with increased action of the heart, an exudation of much fibrin is produced; while in feeble individuals, possessing a small quantity of blood, poor in corpuscles, and in whom the heart acts feebly, and the vessels are not distended, the exudation will contain but little fibrin, although the blood be rich in it. When some poison impedes the formation of fibrin, as in typhus, etc., the exuded matter contains much albumen.

In winter, the body generally contains more blood, and the exudation is more fibrinous, from the distension of the vessels by the greater quantity of the blood. In summer, the body contains less blood, the vessels are less distended,

and the exuded matter is poor in fibrin. In childhood, where a great part of the blood is employed in the evolution of the organs, only a small quantity remains in the vessels, as is proved by our finding it only in the larger veins and in the heart; the matters exuded contain very little fibrin, the vessels being very little distended. Moreover, the blood in the child contains a smaller proportion of fibrin than that of the adult, on account of the greater amount of vegetables in the food.* In chlorosis, in spite of the presence of much fibrin in the blood, the exuded matters contain but little of it. The reason of this is the non-distension of the vessels, from the deficiency of blood-corpuscles. In typhus and other toxæmic diseases, the exuded matter contains very little fibrin, the blood being poor in it; but it contains much albumen. But the condition of the vessels has also a great influence on their power of distension and hence on the quality of the exuded fluid.

XIII. From the preceding observations, the following practical rules may be deduced;—

A. In all diseases where there is an indication to increase the penetration of the blood through the pores of the vessels into the parenchyma of the organs, we must use means to augment the quantity of the blood and of its corpuscles, the activity of the heart and large vessels, and the animal heat.

The quantity of the blood is increased: *a.* By taking a large quantity of aliment: either by the stomach, if it be able to digest a sufficient amount; or by nutritive baths and enemata. *b.* By the ingestion of a large quantity of water, either by drinking or by enemata. Although the water is soon removed by the kidneys, it must in any case first enter into the blood-vessels; for it is unreasonable to imagine the existence of *viæ clandestinæ*, leading directly from the stomach to the kidneys. While, then, the water is in the vessels, these are more distended, and a larger amount of the nutritive part of the blood passes into the tissues. That water remains for some time in the vessels, and is not immediately removed by the kidneys, can be proved from the following experiment. If one animal be bled six hours after drinking, and another only half an hour after, the blood of the latter will be found much more watery than that of the former. The retention of the water in the blood for some time previous to its elimination is also proved by the circumstance that a sweat breaks out on the surface of the body, after drinking several glasses of water; and also by the fact that animals will survive for some time when supplied with water alone. In the latter case, it can only act by increasing the quantity of the blood.

The number of blood-corpuscles is increased by the use of iron; as is proved by the observations of Andral and Gavarret.

The activity of the heart and of the vessels is increased: *a.* By exercise. This is proved by the well-known circumstance that, in violent motion of the body, the activity of the heart is much increased, the vessels are more distended, and a sweat breaks out on the surface of the body. *b.* By the use of spirits and of various other stimulants.

The temperature of the body is increased by means of warm clothing, by warm baths, by warming the air which surrounds the body and by friction.

If one of the forces which assist the exudation of the nutritive part of the blood be diminished, its deficiency must be compensated by the increase in intensity of the others. Hence, after losses of blood, we administer spirits with water, apply friction, and employ means for producing warmth: we also give iron and use baths containing nutritious matters, and advise the patient to take exercise if he be not too weak. We follow the same plan after long abstinence from food, and in convalescence from diseases of long standing; and the same thing is to be done in chlorosis. The asphyxia produced by cold arises from the want of nutrition; hence the same remedies are to be employed. In these cases, water, spirits, artificial warmth, iron, and exercise, act as equivalents to food. This may be witnessed in animals, confined to the use of water, which are revived from their apathetic state by artificial warmth; in drunkards, who live on a very small quantity of food; and in chlorotic patients, who gain

* Lehman, Physiolog. Chemie, 1842, bd. i. p. 194.

strength from the use of iron, and from exercise. After loss of blood, spirits are the best remedy, as they seem to cause an increased flow of blood in the vessels of the brain, which is thus kept in a sufficient state of stimulation, in spite of the small quantity of blood in the vessels.

It will be in place here to answer some objections to the use of spirits, from the effects, real or supposed, produced by them in drunkards. In these persons, the blood is thick and dark coloured. The thickness arises, not from the coagulation of the albumen by the blood,* as Budge and others suppose, but from the large quantity of fat contained in the blood. The dark colour has its rise in the impaired power of the heart and lungs, by which the circulation is impeded, and the carbonic acid is not sufficiently removed from the blood. But all this is far from being a legitimate object of dread, in the moderate use of spirits.

Remedies which increase the exudation of the blood are also to be employed in catarrhal inflammation. The process which here takes place is as follows. Distension of the vessels of the mucous membrane being produced by any cause, the blood stagnates in the vessels; but as it is pressed on by the blood, which is still flowing, it is obliged to pass through the pores of the vessels, as far as the cells of the epithelium, by which it is prevented from passing out. After some time, the epithelium becomes relaxed, and the thinner part of the blood is enabled to exude through its cells, in the form of a thin mucus. Subsequently, the epithelium, being quite spoiled, is thrown off, and the thicker part of the exuded blood escapes. When the part is thus freed from the exudation, the pressure is removed and a new epithelium is formed; after which the part is restored to the healthy exercise of its functions. The sooner, therefore, the epithelium can be removed, the sooner recovery takes place; and this occurs in proportion to the rapidity with which the blood in the congested vessels can be caused to exude. In this first stage, spirits or other stimulants, warmth, cold water or vigorous exercise, are the best remedies. But when the thickened mucus has begun to appear, showing the removal of the epithelium, remedies of another character are indicated.

b. In all cases where exudation is to be retarded, remedies of an opposite character to those before mentioned must be used. We have to diminish the quantity of blood and of blood-corpuscles, the activity of the heart and large vessels, and the temperature of the body.

The quantity of blood and of blood-corpuscles is diminished by bleeding; and we have no means which act so rapidly in decreasing the proportionate quantity of the latter. The blood may also be diminished in quantity by increasing the secretions. All remedies which act as stimulants to the activity of the secreting organs diminish the quantity of the blood. These include laxatives, diuretics, diaphoretics, emetics, and sialogogues. All these remedies

* The assertion of Budge (*Allgemeine Pathologie*), that spirits produce coagulation of the albumen of the blood while in the body, is opposed to experience. They cannot produce this effect in the living body, provided their quantity be kept within certain limits. If they generally had this effect, they would be most active and dangerous poisons; yet we find persons who habitually use them, living to a great age. Orfila having injected alcohol into the veins of animals, found the blood coagulated in the immediate vicinity of the injection, while that in distant parts of the body remained fluid, although as much in contact with the spirit as if the latter had been drunk. We can never assert that substances always produce the same effects in, as out of the body. There are certain circumstances in the living organism, with the nature of which we are not yet acquainted, which are capable of impeding and modifying the chemical action of some substances. The aggregate of these modifying circumstances is termed the *vital force*. As an example of this, the blood when removed from the body is decomposed by oxygen into carbonic acid, ammonia, hydrosulphuric acid, and water; but in the living body, carbonic acid, urea, uric acid, and water are the products. The oxygen always acts according to chemical laws; but there are certain circumstances in the body which compel it to produce urea and uric acid instead of ammonia. If we knew what these are, we should be able to produce urea and uric acid. We can imitate digestion; but we must use pepsin taken from the stomach, because we are not able to make it artificially.

diminish the blood, but do not produce a decrease in the corpuscles. From the effect of diuretics and diaphoretics, the blood loses only water and saline matters; by emetics, purgatives, and sialagogues, it also loses a portion of albumen.

The activity of the heart is diminished by some narcotics, as digitalis, etc., and by acids. Cold has the effect of increasing the contraction of the vessels, and of diminishing the activity of the heart. Tranquillity is also necessary to be observed.

Bleeding, which diminishes the blood and its corpuscles, is to be employed in all inflammations, when the exuded matter cannot be thrown out, but not in individuals who are exhausted and very much weakened. By this operation, we not only diminish the exudation, but we render it more watery, and capable of dissolving the old exudation, so that it may be absorbed. The vessels are not so much distended, and thus less albumen and fibrin, and more water and salts, penetrate into the parenchyma. But in exhausted and weakened persons, where there is only a small quantity of blood, and the fibres of the tissues are relaxed and soft, bleeding may be followed by dropsy, from the exudation of water and saline matters through the lax fibres. Dropsical symptoms appear generally after the subsidence of fever: because while the fever is active, the energy of the heart causes the vessels to be kept distended, so that the exuded matter is albuminous, and is too thick to pass between the fibres of the tissues. But when the fever is past, the activity of the heart subsides; and the quantity of the blood being small, the vessels are very little distended, so that only water and saline matters exude, and by gravitation tend to the lower parts of the body.

The remedies which increase the secretions and excretions act altogether in another way: particularly diuretics and diaphoretics, by the action of which the blood loses water and saline matter. The blood becomes thickened like cholera-blood. In such circumstances, scarcely any water passes through the pores of the vessels into the parenchyma of the organs. The effect, therefore, is quite opposite to that produced by bleeding.

It is easy to understand how, though bleeding and evacuant remedies both diminish the quantity of the blood, they cannot be always used in the same circumstances. In inflammations with fever, in robust and athletic individuals, where the exudation contains much fibrin and albumen, and is deficient in water, so that it requires a new watery exudation to dissolve and absorb it, bleeding which promotes such an exudation of water will be most useful. But evacuants, which impede the exudation of watery matter, protract the disease. But in inflammation without fever, or in exhausted and bloodless individuals, where the exudation is not thick, and wants no other exudation to render it soluble, bleeding is either superfluous or dangerous, while the evacuants mentioned above are useful. The same is the case in inflammations of those parts where the exudation is in general only watery. In the same way, evacuants are remedies against dropsical diseases, by diminishing the exudation of water. The water which has been already exuded will be absorbed, if the lymphatic vessels are in a state of health. The lymphatic vessels, after having absorbed the exuded serum, bring it back to the blood; and so the blood becomes thin in spite of its losing much water by the use of evacuants. But if the lymphatic vessels of the part where the inflammation is are unable to absorb the exuded liquid, and to return it back to the blood, this must become, by the continuous use of evacuants, very thick, so that very little can pass through the vessels. The individual must become weak, and the lymphatic vessels of the whole body having no blood to absorb, must absorb the fat of the organs; and this is the reason that, under the use of evacuants in dropsy, if the dropsical tumour do not decrease, the fat in the whole body gradually disappears. Evacuants act most beneficially in all chronic inflammations. In these diseases, the vessels are generally unable to contract; but the blood is not entirely stagnant. By the use of evacuants the quantity of blood is diminished, and the vessels are less distended, so that they have an opportunity of being restored to their functions. Evacuants are to be given in cases of hypertrophy, especially in

that of the heart. Bleeding is sometimes beneficial: but it is liable to induce dropsy, which does not follow the use of evacuates.

I do not desire to be a panegyrist of purgatives, as I consider that they are not only used sufficiently, but even too often, and without sufficient reason. But I think that diuretics, and probably diaphoretics, should be more used than they are at present. The perspiration consists of water and carbonic acid, and amounts to thirty-four ounces in twenty-four hours; being the same quantity of water as is removed by the kidneys.

If the normal perspiration, which disappears without being noticed, amounts to thirty-four ounces, it is obvious, that the increasing perspiration, which appears in the form of sweat, must be in great quantity. We are therefore able to diminish the quantity of blood in a very considerable degree by diaphoretics. This is the reason why we feel very weak after sweating any time, for the quantity of blood is very much diminished, and the same effect is produced as after a large loss of blood by bleeding.

I think the cold-water cure acts merely as a diaphoretic. The vessels of the cutis being first contracted by the cold, become, by being excited, very weak, as is the case after every application of a strong stimulus. They become lax and distended, and a great sweat follows: during this, the cold bath is repeated, and the vessels, which are yet not quite restored, are again excited. The relaxation of the vessels must now occur to a greater degree than before; and the sweat does not cease for several hours. Besides this, we must remember the exercise which the patients take in climbing hills, etc. The vessels of the cutis are relaxed to such a degree, that even a stasis of the blood takes place in some parts of the cutis, and spontaneous blisters are produced. Warm bath produces relaxation of the vessels of the cutis, but not in such a marked degree as cold applied in the way just mentioned. Sweating baths act in the same way. By these different kinds of baths, we are enabled to rapidly diminish the quantity of blood without danger of dropsy. They have doubtless other effects; but the diminution of the quantity of blood is the first.—*Lond. Journ. Med.*, July and August, 1850.

MATERIA MEDICA AND PHARMACY.

9. *The Koussou, or Brayera Anthelmintica*. By JONATHAN PEREIRA, M.D.—The Koussou, or Brayera Anthelmintica, is an Abyssinian tree twenty feet high. Branches round, rusty, tomentose-villose, marked by the annular cicatrices of the fallen leaves. Leaves crowded, alternate, interruptedly impari-pinnate and sheathing at the base. Leaflets oblong, or elliptical lanceolate, acute, serrate, villose at the margin and on the nerves of the under surface. Stipules adnate to the petiole, which is dilated at the base and amplexicaul. Flowers dioecious, small, greenish, and becoming purple; repeatedly dichotomous; the pedicles with an ovate bract at the base.

The so-called male flowers may be regarded as hermaphrodite flowers, inasmuch as the carpels are well developed. The female flowers are somewhat different in their structure. The outer segments of the calyx are much more developed than in the female flowers, and are four or five times larger than those of the inner row, and are placed somewhat below them; the petals are entirely wanting; the stamina are rudimentary and sterile. The ripe fruits are unknown.

The tree grows in Tigre, Agame, and Shoa; it is cultivated everywhere, and Dr. Beke writes that the tree is "found throughout the entire table land of North-Eastern Abyssinia, but appears to require an elevation of upwards of six thousand (perhaps of seven thousand) feet for its growth. Where I found it most luxuriant was in the vicinity of the source of the river Abai (Bruce's Nile), at an elevation of close upon nine thousand feet. Tigre, the northern portion of Abyssinia, being on the whole of lower elevation than the rest of that country, the tree is only found there in a few places."

Bruce describes the flowers as being of a greenish colour, tinged with purple; and when fully blown of a deep red or purple. The petals, he says, are white.

Preparation.—Mr. Johnston states that the kousso is gathered for medicinal purposes before the seeds are quite ripe, whilst still a number of florets remain unchanged. The bunches are suspended in the sun to dry, and if not required for immediate use are deposited in a jar.

Pharmacography.—I have seen only one package of kousso; this was kindly opened in my presence by M. Simond, of the firm of Caylitis, Simond & Co., the agents of M. Rochet d'Héricourt. It was a deal box, containing about 30 lbs. of the dried flowers, wrapped up in a large skin of red leather. On removing the lid of the box and untying the leather package, the fragrant or balsamic odour of the dried flowers was very powerful. It appeared to me to be somewhat similar to the combined odours of tea, hops, and senna-leaves. The flowers had apparently undergone no preparation beyond that of desiccation. The bunches of flowers were perfect and unbroken, though of course compressed. The general colour of the dried mass was greenish-yellow; but when the flowers were more closely examined the edges of the petals were seen to have a reddish or purplish colour. The taste of the dried flowers is at first not very marked, but after a few minutes a feeble, senna-like, acrid, unpleasant taste becomes perceptible. By soaking the dried flowers in water, they may be unfolded sufficiently to determine their botanical characters, which have been already described. When submitted to microscopic examination, the hairs are perceived to be simple lymphatic hairs, tapering at the distal extremity. In Abyssinia, two sorts of kousso are distinguished—viz., first, the *red kousso* produced by the female flowers; secondly, the male flowers known as *kousso esels*. In commerce the two sorts are always mixed together.

Adulteration.—Considering the enormous price (about 1*l.* 15*s.* per ounce) at which kousso has hitherto been sold in Paris, and the very limited quantity originally supplied by M. Rochet d'Héricourt, it cannot be surprising that the article should be extensively adulterated. Indeed I have been assured, on credible authority, that the powder now selling as kousso is, in fact, the powder of pomegranate bark; and that legal proceedings have been commenced in Paris to put a stop to the fraud, which is well calculated to injure the reputation of the genuine Abyssinian remedy. I have no doubt but that the microscope would readily detect the substitution; but the surest way of obtaining the genuine article is to purchase the dried flowers in the entire state, not in the form of powder.

Although it is not improbable that the anthelmintic property of kousso may in part depend on tannin (since the pomegranate bark, which contains this principle in abundance, is, like kousso, also an anthelmintic), yet what may be termed the peculiar property of the kousso probably resides chiefly in the bitter acrid resin. This is soluble in alcohol and in ether, and appears to be a neutral body, manifesting neither distinct alkaline nor acid properties.

By boiling the dried plant in water a fragrant odour is evolved. No doubt this as well as the odour of the dried plant itself depends on the presence of a *volatile oil*, of which, however, no mention is made in Wittstein's analysis, the oil being present in too small a quantity to admit of its collection when small quantities of the flowers are operated on. It is not improbable that the anthelmintic properties may, in part, depend on this oil; for Schimper states that in Abyssinia the plant is considered to have lost its anthelmintic powers in the third year after its collection. In Europe, however, it retains its powers for a longer period (on account of the cooler climate)?—for the flowers which have been used for all the recent experiments, have been collected more than four years, and we are told in the shop-bill of a Parisian pharmacien, that they may be kept for an indefinite period.

An infusion or a decoction of kousso strikes a dark green olive tint with a solution of the sesquichloride of iron.

Medicinal Properties.—Neither botanical characters, sensible qualities, nor chemical composition, would have induced us to suspect that kousso possesses the valuable anthelmintic properties which experience has shown that it does. The general and prevailing quality of the rosaceæ is astringency, dependent on

the presence of tannic and gallic acids. This is observed in the flowers (*e. g.* rose petals) as well as in other parts of the plants. In this quality kousso agrees with its congeners. But it can scarcely be on this that its vermifuge property solely depends: otherwise, rose-petals, or any other equally powerful astringent, would be as effective in expelling worms as these Abyssinian flowers. But in rosaceæ, as in many other families of the vegetable kingdom, anomalies exist—and to this head we must for the present be content to refer kousso.

Our confidence in the anthelmintic properties of kousso rests, then, on experience only: and the evidence on this point is very strong. All modern travelers in Abyssinia are agreed on the great success of the remedy on the natives of that country; and the experience of physicians in France, England, Germany, and Switzerland confirms the favourable reports made by those who have seen the kousso used in its native country.

In Paris it has been employed with great success by Chomel and Sandras, as well as by numerous other distinguished physicians. In London, our experience of it is much more limited; but the successful results of its use in King's College Hospital, in the hands of Drs. Budd and Todd, and of Dr. Gull in Guy's Hospital, confirm the favourable reports of its efficacy which had reached this country from abroad.

The physiological effects of kousso are not in general very great. Sometimes it excites a slight sensation of heat, nausea, or even vomiting, creates thirst, and frequently, perhaps usually, a gentle action on the bowels. But the latter is commonly so slight, that in a considerable number of cases it is necessary to follow its administration by a mild purgative. It is obvious, therefore, that the efficacy of kousso as an anthelmintic does not depend on its purgative or evacuant influence, but on its poisonous or toxic action on the worm; in fact, it is a true *vermicide*. In one case, that of a woman in France, it brought away ten worms, of which one only manifested evidences of vitality, and that for a few minutes only.

Kousso appears to be an effective anthelmintic in both kinds of tapeworm—viz., the *tænia solium* and *bothriocephalus latus*. In most of the reported successful cases, the *tænia solium* was the parasite expelled; but in one of Chomel's cases, the worm which was evacuated was the *bothriocephalus latus*, and I am informed that kousso has proved most effectual in Switzerland, where, as is well known, the *bothriocephalus* is the prevailing tapeworm.

The dealers in kousso assert that one dose will, in every case, effect the radical cure of tapeworm. But this must be obviously an error. Even supposing that it invariably destroys all the worms in the alimentary canal at the time of its exhibition, it can in no way prevent their recurrence, provided the patient retains his predisposition (which there is no reason to suppose is affected by the kousso), and is subjected to the same influence. It certainly does not radically cure the Abyssinians; since, as several writers tell us, they resort to this remedy monthly. Schimper, the Governor of Adoa, says it does not completely expel the *tænia*, or at least rarely does so. But he adds that, possibly, in Europeans, in whom the verminous disposition is not so pronounced as in the Abyssinians, it may perhaps act in a more complete manner. In the Abyssinians, this verminous disposition is innate, and is dependent, he adds, on the regimen which they adopt.

Hitherto the great drawback to the use of kousso has been the difficulty of procuring the remedy, and its enormous cost. At the time when it could be purchased in Paris, its price was 1*l.* 15*s.* per ounce, or 17*s.* 6*d.* per dose. M. Rochet d'Héricourt, the sole holder of the medicine at the present time, refuses to sell any quantity less than his entire stock at the rate of one guinea per ounce. His nephew tells me that his uncle possesses 1400 lbs. of it, which, at one guinea per ounce, will cost 22,400 guineas. The impossibility of effecting a sale on such terms will, I doubt not, ultimately compel the holder to reduce his demands to something approaching to reason. It does not appear that the remedy is very costly in Abyssinia. Schimper, writing from Adoa, in Abyssinia, says that it is found in commerce at a very low price. At Yangaro (commonly called Zingaro) the sovereign has the exclusive use of it, his subjects being prohibited from employing it; but in other parts free trade in kousso is

permitted. Considering the frequency and rapidity of our communications with Egypt (to which place, according to Dr. Brayer, kousso is conveyed by caravans), no difficulty, I apprehend, will be experienced in obtaining an abundant supply of it. Its present price is a virtual prohibition of its use.

The flavour, though not very strong, is by no means agreeable; and is sufficiently powerful in some patients to create disgust and excite vomiting. In one case under M. Chomel, the whole of the remedy was rejected by vomiting. No ill effects have resulted from its use in this country; nor have I met with any statement of its injurious action, except in Mr. Johnson's "Travels in Southern Abyssinia," where it is stated that its "operation is speedy and effectual; and to judge by the prostration of strength it occasioned in my servants when they employed this medicine, it must be dreadfully severe. I can answer for this, that it occasions frequent miscarriages, often fatal to the mother, and even men have been known, after a large dose, to have died the same day from its consequences. I am therefore surprised at the noise this remedy has occasioned the last few years in Europe, as if it promised to be a valuable addition to our materia medica. This, I conceive, can never be; for no civilized stomach could bear the bulk of the drug necessary to produce its effects. Even in Abyssinia it is but barely tolerated, and let another remedy equally efficacious for dislodging tapeworm be introduced into that country, and the use of kousso will be soon abandoned. In fact, several other vegetable productions are now employed to escape the punishment of a dose of this violent cathartic."

Administration.—Both Bruce and Schimper tell us that the Abyssinians take a handful of the dried flowers as a dose. In Paris, the dose has varied from four to six drachms. In general, however, half an ounce (troy weight) is considered a dose for an adult. For different ages the doses are thus adjusted:—

Adults	.	.	.	.	.	.	1 dose=240 grs. ($\frac{1}{2}$ oz.)
Children from 7 to 12 years,	.	.	.	.	.	$\frac{2}{3}$ of a dose=160 grs.	
" 3 to 7 "	.	.	.	.	.	$\frac{1}{2}$ of a dose=120 grs.	
" not exceeding 3 "	.	.	.	.	.	$\frac{1}{3}$ of a dose= 80 grs.	

The kousso should be taken in the morning fasting. The only preparation necessary is that the last meal of the previous evening should be slight. The evacuation of the bowels by a mild purgative or a lavement is also desirable. The mode of administering the remedy is as follows: The powdered flowers are to be mixed with lukewarm water for an adult (about ten ounces) and allowed to infuse for a quarter of an hour. A little lemon juice is then to be swallowed, and, the infusion being stirred up, the whole is taken, liquid and powder, at two or three draughts, at short intervals, being washed down by cold water and lemon juice. To promote the operation, tea (without sugar or milk) may be taken. In three or four hours, if the remedy has not operated, a dose of castor oil or a saline purgative should be administered.—*Pharm. Journ.*, July, 1850.

10. *Styptic Properties of Oil of Turpentine.*—Dr. WM. BUDD, physician to the Bristol Infirmary, highly extols the styptic properties of oil of turpentine, and states that he has met with three cases recently in which hemorrhage was speedily arrested on the administration of oil of turpentine after other medicines had failed. Dr. Budd awards the merit of this discovery to Mr. James Yonge, an eminent practitioner who lived in Plymouth in the time of Charles the Second, and who made his observations public in a pamphlet bearing the quaint title of "*Curus Triumphalis è Terebintho.*"

The next testimony quoted by Dr. Budd is that of the illustrious John Hunter. Speaking of styptics generally, Hunter says: "A dossil of lint, dipped in oil of turpentine, after having first wiped the wound clean, in order that it may reach the vessel, is the best, and may be renewed pretty often. I have seen it immediately stop vomiting of blood from the stomach, after all other means had failed, given internally with white of egg, as often as the stomach would bear it. In external hemorrhages, where it had not the desired effect applied externally, I would give it internally. *It is the best, if not the only true, styptic.* Thus, in a case of nasal hemorrhage, which nothing would stop, I gave ten drops of oil of turpentine in a draught, and repeated it every two or three

hours, which entirely stopped the bleeding in less than twenty-four hours, and it never returned."

These are very remarkable words. They are the words, too, of a man of genius; of a man who was particularly cautious of committing himself to any rash statement; and they refer to a matter on which it is obviously easier to collect evidence free from ambiguity than on almost any other connected with the practice of our art.

The testimony of Mr. Vincent, late senior surgeon to St. Bartholomew's, is to the same effect, and equally strong. After making some observations on the subject of the hemorrhagic diathesis, this experienced surgeon goes on to say:—

"A most desirable object would be obtained by securing some remedy that would alter this peculiar disposition in vessels to bleed, and arrest the loss of blood, so that it may not continue to endanger the life of the patient. I have so invariably found turpentine infallible in effecting this intention, that it may, I think, be depended upon as a most valuable remedy.

"Some years ago, a youth was brought to me who was passing blood in his urine. I ordered some draughts, with a few drops of oil of turpentine. The bleeding quite stopped before the end of the second day, and did not return. About a twelvemonth afterwards, he was brought to me, having cut his finger but slightly. It had continued bleeding for some days. I gave him turpentine again. It stopped in a day or two. Not long after, he came a third time to me. He had had a tooth extracted, and the gum had been bleeding for several days. The turpentine was had recourse to, and the remedy soon acted in the same sanitary way. I have several times been called in on account of hemorrhages where teeth have been extracted, and have never seen the turpentine fail in this or in other similar cases of hemorrhage."

The reader will not fail to remark that the evidence which has now been laid before him not only tends to show that oil of turpentine is possessed of styptic powers of a high order, but that, if this evidence be good, these powers are effectual in issues of blood from sources the most various, and arising from causes the most diverse. Tuberculous hemoptysis, nose-bleeding, hæmatemesis, purpura, and traumatic hemorrhage have little else in common beyond the fact of an unnatural escape of blood from its vessels. The effects of turpentine in purpura, therefore, are most probably directed against not purpura as purpura, but against purpura as hemorrhage. Bearing this in mind, I beg it to be also borne in mind that, in the case of M. A. Riley, not only did the bleeding from the kidney cease immediately after its administration, but that from the intestine also, as well as the tendency to extravasation from the vessels of the skin.

Another very important fact, that would also seem to be established by this evidence, is that turpentine is even more effectual in arresting hemorrhage when directly applied to the bleeding surface than when it is given internally. From these facts, taken together, the inference would seem to be pretty secure that its virtues as a styptic must depend on its exerting some direct influence on the contractile power of the blood-vessels. In the elementary nature of such a property, we seem to find the best, and indeed the only, plausible explanation of the equal efficacy of this medicine in restraining bleeding under such a great variety of pathological conditions. In the adoption of this view, we also obtain, if I mistake not, the best guide to the cases in which its administration is most likely to be successful. They are, on the one hand, the great group of hemorrhages, which are generally characterized by pathologists by the epithet *passive*; and, on the other, those in which, in addition to its general action, the remedy comes into direct contact with the surface from which the blood is issuing. I have had no experience of its effects in hæmatemesis arising from simple ulcer of the *stomach*, but, from what we witnessed in the case of our patient's *mouth*, I can readily believe that Dr. Seymour is right in the conclusion to which he has come, that in that disease it not only tends to stop the bleeding, but also promotes the healing of the sore.

In what are called active hemorrhages, it would not seem to be so suitable a medicine. We must not, however, be hampered by definitions like these in

cases where life is threatened. Cases of hemorrhage are cases in which, beyond all others, the nice distinctions of pathology have to give way before the great emergencies of practice.

In the treatment of uterine hemorrhage, whether occurring in connection with parturition or not, the employment of turpentine, both topical and internal, admits, I have no doubt, of much more extensive application than it receives at present. Of its great use in severe menorrhagia from common causes I can speak from my own experience; and in the *Provincial Medical and Surgical Journal* for the present week, Mr. Griffiths, of Wrexham, gives a series of cases, from which it would appear that, in the dose of half an ounce or an ounce, repeated once or twice, according to circumstances, this medicine often succeeds in arresting at once the flooding which is apt to occur after delivery, and which is sometimes so appalling.

In common cases, such as those of purpura, for instance, where time does not press, I have found doses varying from ten minims to half a drachm quite effectual; but in cases of rapid loss of blood, where, as sometimes happens, every minute is of importance to life, it is better to give half an ounce or an ounce at once, to be followed up by smaller doses at shorter intervals.

I should mislead you, were I not to add, before concluding, that the use of this medicine is not without its drawbacks. Few great gifts come to us without alloy, and turpentine is no exception to the rule. In the first place, there are few drugs more repugnant to delicate stomachs. In many, it excites vomiting; in others, it causes painful strangury; and the irritation of the urinary organs is sometimes so great that blood is passed with the urine.

Some of these evils may, however, be avoided, or much diminished, by adopting a particular mode of administering the medicine. Thus, I have found that the addition of half a drop or a drop of creasote to each dose almost entirely covers its nauseous taste, and prevents the risk of sickness. Creasote itself is not, it must be owned, the most palatable of drugs, but neither is it nauseating. Ten or twenty drops of spirit of rosemary will help to make the prescription less disagreeable; and of the different vehicles proposed for keeping the turpentine in suspension, I think you will find common mucilage the best.

The inconvenience arising from the risk of strangury is not so easily obviated. Something, however, may be done to diminish it by causing the patient to take freely of diluents pending the employment of the medicine. After all, it is well to know that this accident is not a serious one. However severe the irritation may be, it speedily subsides on suspending the treatment; and, as far as I know, it never leaves any permanently bad effects, even when it has gone on to bloody urine.—*Med. Times*, Aug. 17, 1850.

11. *External Employment of Liquor Chlorini*.—DRS. CRAMER and SCHNEIDER have published communications recommending the more extensive use of chlorine as an external application. The good he had seen result from the application of *liquor chlorini* to malignant pustule and similar affections, induced Dr. Cramer to try its effects in bad furunculous swellings, the progress of which was thus surprisingly expedited, and the extension of the ulceration much limited, as compared to what occurs under the use of poultices. So, too, he has derived great advantage in employing it in large abscesses and in buboes, the matter sometimes becoming reabsorbed; and, where this is not so, the progress of the case is still very favourably influenced. Great relief followed its application to the neck in a case of scarlatina, in a child, wherein suffocation seemed impending. He keeps compresses well soaked in the fluid constantly to the part. Dr. Schneider still more strongly recommends its use as a gargle in variolous diseases and in angina. He uses it diluted with water, and finds it exert a remarkable abortive power over variola, when affecting the tongue and throat, and angina in general.—*Brit. and For. Med.-Chir. Rev.*, July, 1850, from *Casper's Wöchenschrift*, No. 8.

12. *Determination of the Quality of Opium*. By M. GULLERMOND.—This process for determining the amount of morphia in opium is simple and easy of

execution. A sample of about 15 parts (the author takes 15 grammes, equal to half an ounce), is to be selected from different portions of the mass of opium under trial. This is to be rubbed in a mortar with 60 parts (by weight) of alcohol at 70 degrees (density .890), thrown upon a cloth, and expressed to separate the tincture. The residue is again treated with 40 parts of alcohol of the same strength, and the united tinctures are to be received in a wide-mouthed bottle, containing 60 parts, by weight, of ammonia (density .923, we presume, according to the French Codex). In twelve hours, the result is obtained; the morphia is separated, but accompanied by a greater or less amount of narcotine, the morphia lining the sides of the bottle under the form of coloured crystals, rather large and rough to the touch; the narcotine being found in small pearly crystals, white, and very light. The crystals are to be collected on a cloth, and washed several times with water, to separate the meconate of ammonia which adheres to them. They are then to be thrown into a small cupful of water. The narcotine, which is very light, remains suspended in the liquid, and can be readily separated by decantation from the morphia, which, remaining at the bottom, can be collected, dried, and weighed. An opium, to be of good quality, ought to yield in this way from 1.25 to 1.50 of crystallized morphia for 51 of opium; some samples yield 1.75.

This process, which succeeds perfectly well with opiums of good and middling quality, does not succeed with opiums which are poor in morphia, or very resinous; but the fact of their not giving results shows that they are of inferior quality, and ought to be rejected.—*Monthly Journ.*, June, from *Bulletin de Thérapeutique*, Feb. 15, 1850.

13. *New Adhesive Dressing.* By Dr. MELLEZ.—The eagerness with which collodion was adopted by many practitioners shows their want of satisfaction with the adhesive materials commonly in use. Certain disadvantages attach to all the ordinary means of keeping wounds in apposition, such as sutures, adhesive and isinglass plasters. Collodion, which possesses many valuable qualities as an adhesive, requires, in order to give satisfactory results, to be of a precise degree of concentration, and, like other dressings, demands, in order to be nicely applied to wounds, the aid of assistants, which is not always at the command of the surgeon, especially in country practice, where he must often operate without the aid of others, and where the patients cannot be visited, except at long intervals.

From his dissatisfaction with the ordinary adhesive dressings applied under such circumstances, Dr. Mellez was led to adopt a solution of "gum lac," which is much used in the arts as a varnish and adhesive.

He uses a solution of this substance in spirit of wine, made with the aid of a moderate heat and in such proportion as to give a mixture having the consistence of jelly, or nearly approaching to it. It can be made in a common wide-mouthed bottle, and a simple cork suffices for its preservation. When he uses it, he spreads it with a spatula upon pieces of cloth or taffetas, cut to the size required. According to him, it possesses all the good properties of collodion, and even higher properties than that substance—viz., contraction during its desiccation, impermeability to air, absence of all irritating action on the skin or wound, intimate adherence to the skin, and resistance to the action of water, fatty matters, or the discharges from the wound. It has not, like collodion, the quality of being colourless; but he believes that it might, if required, be decolorized, and, if applied upon animal membrane, would furnish a transparent dressing. It does not dry so quickly as collodion, but that is the only advantage the latter possesses. The lac dressing, however, does not require so long time as to be inconvenient to the surgeon. Moreover, it is not indispensable for the lac, as it is for the collodion, that the skin be absolutely dry. It has further the advantage (not to be overlooked) of being more moderate in cost.—*Ibid.*, June, 1850.

14. *Formulae for the External Use of Glycerine.*—Mr. STARTIN furnishes the following useful formulæ for superficial burns, scalds, or excoriations; intertrigo, chaps of the lips, herpes labiorum, &c.: R. Gum tragac. pur. ʒij ad

℥ss; Liq. calcis ℥iv; Glycerine purif. ℥j; Aq. rosæ dest. ℥iij. To form a soft jelly, to be used by way of ointment or embrocation.

For prurigo, lichen, strophulus, lepra, psoriasis, pruritus, &c.: R. Acid. nitric. dil. ℥ss ad ℥j; Bismuth. trisnitr. ℥ss; Tinct. digitalis ℥j; Glycerine purif. ℥ss; Aq. rosæ ℥viiss. M. for a lotion, to be used by dabbing the part.

For chapped nipples or hands, fissures of the lips, irritation of the skin of any kind, as after shaving, exposure to the sun, for pityriasis, &c.: R. Sodæ biboracis ℥ss ad ℥j; Glycerine pur. ℥ss; Aq. rosæ ℥viiss. M. for a lotion, to be used by dabbing the part affected.

For alopecia following fevers, &c., or for the falling off of the hair, dryness, or want of action of the scalp, thinness of the hair, &c.: R. Sp. ammon. co. ℥j; Glycerine pur. ℥ss; Tinct. cantharid. ℥j ad ℥iij; Aq. rosmarin. ℥vij. M. for a lotion, to be used with a wet hair-brush once or twice a-day.

For "hot" rheumatism, or arthritic gout, neuralgic pains, sprains, bruises, stiffness, &c.: R. Lin. saponis comp. ℥iss; Glycerine pur. ℥ss; Ext. belladon. ℥j, &c. M. for an embrocation, to be used twice in a day in the ordinary manner.—*Ranking's Abstract.*

MEDICAL PATHOLOGY AND THERAPEUTICS AND PRACTICAL MEDICINE.

15. *Theory of the Formation of the Fibrinous Concretions on the Valves of the Heart.*—JOHN SIMON, Esq., in his interesting lectures on General Pathology, delivered at St. Thomas' Hospital, reported in the *Lancet*, makes the following important remarks on this subject:—

"The general opinion, which till very lately has been unquestioned, is that the lining membrane inflames, and pours out lymph (just as the pleura or pericardium might do), and that these vegetations are *excrescences*, which have thus arisen in the inflammatory process.

"Now here on the threshold of the subject, a doubt occurs—Is the lining membrane of the arterial system susceptible of inflammation? 'Inflammation,' in the language of the schools, 'consists in an increased action of the blood-vessels of a part.' Without pledging ourselves for the accuracy of this definition, we may use it in the present instance as a rough criterion of inflammation; at least, negatively. No part can be said to inflame, in the ordinary sense of the word, which has not vessels of its own. You cannot talk of inflammation of the hair or nails. What, then, are the blood-vessels of the lining membrane of the arterial system, which this theory supposes to be the seat of an increased action? That portion of an artery which we term its inner coat has no blood-vessels of its own, nor do those of the middle or contractile coat (which are derived from the so-called *vasa vasorum*) penetrate to a sufficient depth to influence materially (if at all) the nutrition of the lining membrane.

"In the museum of the College of Surgeons, there is a preparation of Mr. Quekett's (an injection done, as all Mr. Quekett's are, with admirable success), which shows how very much the *vasa vasorum* falls short of reaching the lining membrane of the artery. And—if you will but think for a moment—what should *vasa vasorum* do there? what could they convey more fit for the nutrition and growth of the membrane than what is already there? than that blood, namely, which is already washing over it incessantly and profusely?

"And again, gentlemen, reflect on this: the lining membrane of the artery and of the valves has an epithelium; wherever epithelium grows, the old cells drop off in a direction opposite to that whence the new ones derive their materials of growth. Just as our scales of epidermis drop from the surface of our bodies, being nourished and renewed from within, just so, if the epithelium of an artery were renewed from without (*i. e.* by *vasa vasorum*), the old scales, as fast as they become detached, would drop into the interior of the vessel; and though, no doubt, their decay is very slight, and the number that might thus

pass into the circulation, and presently obstruct the capillaries, would be very small, still it would be essentially a clumsy arrangement.

"From a variety of reasons, it seems almost certain that the nutrition of the lining membrane of the circulating system is derived directly from the blood with which it has contact; and that its morbid changes depend, not on any inflammatory condition due to the *vasa vasorum*, but on those humoral changes, those variations in the qualities of the blood, by which it is more immediately and more certainly affected than any tissue of the body.

"On these grounds there would be great *prima facie* difficulty in believing that the endocardial deposits could be of inflammatory origin. But this is not all; for, if they were inflammatory exudations, why should they be so peculiarly limited to projecting or uneven surfaces of the lining membrane? And why should they evince so decided a preference for the *left* side of the heart? Both sides of the heart, and all points of each cavity, are (one would think) equally exposed to the causes of inflammation; the coronary arteries supply both ventricles of the heart indifferently; and we well know that acute pericarditis pays no respect to the grooves and septum of the heart; it traverses all such lines of demarkation, injects the blood-vessels of right and left sides alike, and covers ventricles and auricles equally with its dense inflammatory exudation. On the supposition that these vegetations are inflammatory effusions from the membrane, I should be quite unable to explain why they should almost entirely confine themselves, as they do, to the valvular apparatus; and why the predilection for the left side should be so great that the right is very rarely affected—perhaps never, except where the left has first suffered, and where the disease has been of such extreme intensity that even its weaker affinity for the right side has been able to manifest itself.

"The opposite doctrine is the more tenable one. I believe that the origin of these vegetations is directly humoral; that they arise as fibrinous precipitations from an overcharged solution—the valves encrusting themselves with fibrin just as a stick in certain streams coats itself with a calcareous envelop; and that the preference shown for the left side of the heart admits of explanation by reference to the peculiarities of its contents—the new-made arterial blood.

"You will observe that this theory involves the supposition that arterial blood is more prone than venous blood to precipitate its fibrin, either as containing more of it, or as containing it in some more separable form.

"Not wishing to leave this a matter of uncertainty, I have experimented on the subject. I have carried a single thread, by means of a very fine needle, transversely through the artery and vein of a dog, leaving it there so that it might cut the stream; and I have done this repeatedly, sometimes in the femoral vessels, sometimes with the carotid and jugular, sometimes with the aorta and cava. I have suffered the thread to remain during a period of from twelve to twenty-four hours. My experiments have given me, as a uniform result, that the arterial blood with the utmost readiness deposits its fibrin on the thread; the venous blood with the utmost reluctance. And in most of my experiments, the thread, where it traversed the canal of the artery, presented a very considerable vegetation on its surface (exactly like those we are talking of on the valves of the heart); a vegetation sometimes as large as a grain of wheat: always of a pyramidal shape, with its apex down-stream, and its base attached to the thread. In the artery, one might say that the thread whipped the blood, just as one whips blood in a basin to get the fibrin out of it; but with this trifling difference, that, instead of the rod beating the fluid, the fluid ran over the rod and precipitated its fibrin there. In the vein, the thread seemed to operate no way but obstructively; never coating itself with fibrin, but sometimes delaying or stopping the circulation with a voluminous black clot, chiefly collected on that side of the thread remotest from the heart. Accordingly, the general statement and rationale of the matter appear to be as follows: The disease in which these deposits are so frequent is one of intense over-fibrination of the blood, and one in which almost certainly there are other conditions besides quantity making the fibrin easy of precipitation; the left side of the heart has preference, because it is the arterial side, and because arterial blood, as we have seen, readily parts with its fibrin; the valves, and particularly their stream-

ward surfaces, are chosen for the deposit, because their position exposes them chiefly to the friction of the current; so that the whole curious selection of site for the deposit resolves itself into the concurrence of two conditions, which are fulfilled in that one spot of the vascular system—namely, the greatest chemical tendency to the deposition of fibrin, with the greatest mechanical facilities for its entanglement.

“In introducing this subject, I mentioned that it is one of great practical importance. Many people bleed locally, or even generally, when they hear an endocardial murmur arising in the course of rheumatic fever. In their eyes, the new disease is endocarditis; and everything ending in *-itis* is thought, in at least a majority of instances, to be benefited by bleeding. Therefore, gentlemen, do not be in a hurry to call it endocarditis; and, as for bleeding, all that I would venture to say (for of course the treatment of this physician’s disease does not fall within my province) is to assure you of the pathological fact that you may bleed a patient to death without altering (except probably to increase) the proportion of fibrin in his blood.

“I may mention, however, as of some pathological interest, that, in a recent work on Diseases of the Joints, by a French surgeon of considerable experience (M. Bonnet of Lyons), a section is devoted to the treatment of acute rheumatism by nitrate of potash in large doses (up to an ounce or an ounce and a half per diem). He speaks of its utility in the highest terms, and he quotes with full concurrence a passage from M. Gendrin, who has likewise used the medicine very extensively, to the remarkable effect that this method of treatment possesses this, among other advantages, that it prevents inflammation of the endocardium—*il prévient les endocardites*. You will find an interesting paper, on the same method of treatment, communicated by Dr. Basham to the Médico-Chirurgical Society, and published in the last volume of their *Transactions*.

“Now we know that nitrate of potash is a powerful solvent of fibrin; we know that in these large doses a quantity of it must be retained in the blood, and we are thus enabled to interpret the efficiency of the remedy in accordance with our knowledge of the disease. Nitre, if present in the blood in sufficient quantities, would prevent fibrinous concretions on the valves, by increasing the solubility of their material, and diminishing its liability to precipitation.”

16. *Exudation; its Pathology and Treatment*.—This is the title of a comprehensive essay, by Dr. HUGHES BENNETT, in which we have a minute and explicit account of the varieties of exudation, upon which, as he observes, depend the majority of the diseases which we are called upon to treat. The varieties alluded to are—the simple, the cancerous, and the tubercular exudation. Dr. Bennett gives a brief explanation of the term “exudation,” and then proceeds to describe—

1. *The Early Phenomena of Exudation*.—The changes which are associated with this process are stated to be: 1. Narrowing of the capillaries, with acceleration of blood current. 2. Dilatation of these vessels and retardation of the current. 3. Irregularity in the currents. 4. Stagnation of the blood. 5. Liquor sanguinis permeates the coats of the vessels. These various processes are well seen in the circulation of the frog’s foot.

2. *Theory of Exudation*.—The first step in the process, Dr. Bennett observes, is explicable on the supposition that the capillaries are endowed with muscular fibres; the narrowing of their calibre is due to the contraction of these, the dilatation to their subsequent relaxation.

The rapid and slow movement of the blood is accounted for on the hydraulic principle that, when a certain quantity of fluid is propelled through a tube, its velocity alters, the propelling force being the same, according as the tube is narrowed or widened. The stoppage of the blood, and the exudation of liquor sanguinis, he considers more difficult of explanation. The theory advanced by some, that it is due to the formation of large numbers of colourless corpuscles, and their adherence to the sides of the vessels, he does not consider tenable. His own conviction is that the phenomenon is due to some change not in the blood or in the vessels, but in the extra-vascular tissues; a modification, per-

haps, of the force which, in the physiological condition, attracts nutritive materials from the blood.

3. *Results of Exudation*.—The series of phenomena which follow upon the act of exudation are regulated materially by the physical qualities of the liquor sanguinis. This varies under certain conditions of system, to which the term diathesis is given, and it accordingly becomes necessary to consider exudation in its simple form, and as it occurs under the two leading diatheses, the cancerous, and the tubercular.

i. *Simple Exudation*, according to Dr. Bennett, presents four forms: 1. As it occurs on serous membranes, in which it has a tendency to fibrillate. 2. As it occurs on mucous membranes, with a tendency to conversion into pus globules. 3. As it occurs in parenchymatous structures, when it is granular. 4. As it is seen in wounds and sores. Dr. Bennett describes each of these varieties at length, and illustrates them by several wood-cuts, for which we must refer to the original.

ii. *Cancerous exudation* presents three principal forms, which are dependent on the relative amount and arrangement of the cells and fibres formed in it. 1. The structure is very hard, and is principally formed of fibres (*scirrhus*). 2. The structure is soft, containing a copious milky fluid, in which numerous corpuscles swim (*encephaloma*). The structure has a fibrous basis, so arranged as to form areolæ or loculi, containing a gelatinous gum or glue-like matter (*colloid cancer*).

1. *Scirrhus* presents to the naked eye a whitish or slightly yellowish tinge; is dense and hard to the feel, and offers considerable resistance to, and often crunches under, the knife. On making a thin section of the growth, it is seen to be principally composed of filaments, which vary in size, and run in different directions, sometimes forming waved bands, at others an inextricable plexus, among which, however, nucleated cells may be seen to be infiltrated. Occasionally the fibrous structure forms loculi or cysts, enclosing similar cells. The so-called *cancer-cells* may be round, oval, caudate, spindle-shaped, oblong, square, heart-shaped, or of various indescribable forms, from pressure on their sides. In size they may vary from the $\frac{1}{100}$ th to the $\frac{1}{10}$ th of a millimetre in diameter. The cell-wall, when young, is smooth and distended; when old, it is more or less corrugated and flaccid. Each cell contains at least one nucleus, often two, and sometimes they increase in number from three to nine. Most commonly there is only one, which is round or oval, generally the latter, and contains one or two granules or nucleoli. The nucleus, like the cell itself, varies in size, and may occupy from one-sixth to four-fifths of its volume; between the nucleus and cell-wall there is a colourless fluid, which, at first transparent, becomes afterwards opalescent, from the presence of molecules and granules. On the addition of water, the cell-wall becomes distended by endosmosis, and is enlarged. When acetic acid is added, the cell-wall is rendered more transparent and in young cells is entirely dissolved, whilst the nucleus, on the other hand, either remains unaffected, or its margin becomes thicker, and its substance more or less contracted.

2. *Encephaloma* also presents a fibrous texture, which, however, is very loose when compared with that of scirrhus. In the denser parts of the growth, indeed, it closely resembles that form of cancer; but where it is pulpy and broken down, often no traces of fibres, or at most some fragments of them, are visible.

The whitish cut surface is often more or less mottled, with a grayish, pinkish, reddish, yellowish, or black colour. The first two are owing to different degrees of vascularity. The reddish spots are owing to extravasations of blood, of greater or less extent; and these, when very large, constitute what has been called by some surgeons *fungus hæmatodes*. The yellowish colour, when it surrounds bloody extravasations, is owing to imbibition of their colouring matter; but when reticulated over the surface, or collected in masses, it is generally dependent on fatty degeneration of the cancerous tissue, and forms the so-called reticulum (*cancer reticulare of Müller*). The yellow matter is usually of cheese-like consistence, friable, and often resembles tubercle, for which it has been mistaken. The blackish tinge is owing to black pigment, which may be infil-

trated among the cancerous elements, and exist within the cells, constituting the malignant melanosis, or melanic cancer, of authors.

3. *Colloid cancer* consists of a fibrous structure so arranged as to form areolæ or loculi, which are filled with a gray or amber-coloured glutinous matter, sometimes transparent, at others opalescent or semi-opaque. This matter is occasionally found quite structureless, or exhibits only a finely molecular appearance. Under these circumstances, the term *colloid tissue* has been applied to it. At other times, numerous nucleated cells, presenting all the characters of cancer cells, in various stages of development, are found in it as a blastema; and we observe that the growth has a tendency to spread. This is colloid cancer, which, when it is formed on a free surface, as on the peritoneum, often presents small grains of a gray colour, resembling coagulated gum Arabic. When collected in masses, these have an irregular nodulated aspect.

III. *Tubercular Exudation* has been spoken of as presenting a miliary infiltrated or encysted form; but these distinctions have no reference to structure, but merely to the extent and age of the exudation. On section, when tough, it presents a smooth or waxy, and when soft, a slightly granular surface. On pressure it is friable, and may break down into a pulpy matter, but never yields a milky juice.

A small portion squeezed between glasses, and examined under the microscope, presents a number of irregular-shaped bodies approaching a round oval, or triangular form, varying in their longest diameters from the $\frac{1}{120}$ th to $\frac{1}{75}$ th of a millimetre. These bodies contain from one to seven granules, are unaffected by water, but rendered very transparent by acetic acid. They are what have been called tubercle corpuscles. They are always mingled with a multitude of molecules and granules, which are more numerous as the tubercle is more soft. Occasionally, when softened tubercle resembles pus, constituting scrofulous purulent matter, we find the corpuscles more rounded, and approaching the character of pus cells. They do not, however, on the addition of acetic acid, exhibit the peculiar granular nuclei of these bodies.

The gray granulations described by Bayle may be seen, on careful management of the light, after the addition of acetic acid, to contain similar bodies to those described as tubercle corpuscles, closely aggregated together, with their edges indistinct, and containing few granules.

Cretaceous and calcareous tubercles, on the other hand, contain very few of these bodies, their substance being principally made up of numerous irregular masses of phosphate of lime, and a greater or less number of crystals of cholesterine.

4. *Pathology of the three kinds of Exudation.*—We have seen that the liquor sanguinis transudes through the coats of the capillaries, and, coagulating outside the vessels, constitutes an exudation more or less solid. Much of the serum which accompanied it is rapidly absorbed, but what remains constitutes a blastema, which becomes, as has been described, organized in various ways, according to the seat of the exuded material. Dr. Bennett sums up the most important characters of the three kinds of exudation as follows:—

“We observe in a simple or inflammatory exudation, that it may occur at all epochs in life; that it may attack all tissues, and most commonly those which are very vascular; that it may be poured out in large or small quantities; and that it may occur with greater or less rapidity—hence the terms acute and chronic. We further observe that the acute exudations are generally attended with symptoms of a peculiar character (inflammatory), and have a great tendency to cell or temporary formations, which rapidly break down, are absorbed and excreted by the emunctories; that the chronic exudations, on the other hand, have a tendency to fibrous or permanent formations, producing adhesions, strictures, hypertrophies, &c.

“We observe, in a cancerous exudation, that it occurs for the most part in persons of adult or advanced life; that it may also occur in every tissue, but is by far most common in glandular or fatty organs, such as the liver or female mamma, and is very apt to attack the lymphatic glands *secondarily*; that its progress, although sometimes slow when very fibrous, becomes rapid when corpuscles abound in it; that there is a great tendency to the formation of the

most perfect forms of cell life, which have the power of self-development, and thereby of spreading to neighbouring tissues; and lastly, that when, by pressure, ulceration is produced on free surfaces, it bursts through these in exuberant fungoid excrescences.

"We observe, in a tubercular exudation, that it occurs for the most part in young subjects, between the periods of dentition and of adult age; that it may also occur in all tissues, but is by far most common *primarily* in the lymphatic glands, and afterwards in fibrous or albuminous textures, as the lungs and serous surfaces; that its progress is generally exceedingly slow; that there is no disposition to the formation of perfect cell-formation, but rather to abortive corpuscles, which form slowly, and slowly break down; that there is little tendency to absorption, but great liability to disintegration and ulceration; and finally, that the local changes are almost always preceded by derangement of the *primæ viæ*, and a group of symptoms known under the name of dyspepsia.

"Taking, then, the products of simple inflammation (say pus) as a standard, we cannot fail to remark that, whilst the cell-development of tubercle is below, that of cancer is above this standard. Of the three kinds of exudation, tubercle is the lowest, and cancer the highest, in the scale."

On what the difference in the developmental power of the exudation depends, the author does not profess to say: but he is inclined to the belief that it is due to some inherent property in the matter itself. This, as he observes, is generally admitted, pathologists tracing variety of exudation to variety in composition of the blood; but here they stop, forgetting, apparently, that there must be a cause for the difference in the blood, and that this cause requires elucidation.

The solution of the question Dr. Bennett thus attempts. He says that numerous facts "render it probable that, while the blood is normal in simple exudation, it contains an excess of nutritive materials in cancerous, and a deficiency of them in tubercular exudation."

5. *Treatment of Exudation.*—The indications of treatment mentioned by Dr. Bennett are three—1, to prevent or diminish exudation; 2, to assist its removal when deposited; 3, when this cannot be accomplished, to render it as innocuous as possible. The manner of accomplishing this is laid down in the following words:—

"1. To prevent or diminish the extent of an exudation, we must adopt measures to overcome the dilatation of the capillaries, their distension with blood, and the attractive power (whatever that is) which draws the liquor sanguinis into the surrounding textures. This is accomplished—1st. By topical applications of cold and astringents, which stimulate the capillaries to contraction. 2d. By topical blood-letting, which, by drawing blood from the neighbourhood of the part, favours the onward flow of blood through the obstructed capillaries. 3d. By general blood-letting, which, by diminishing the quantity of blood in the system, is supposed to act indirectly in the same manner, as well as in favouring absorption of the exudation before it becomes organized. 4th. Soothing topical applications, such as warm fomentations, opiates, &c., which relieve the irritability of the nerves in the part, on which, hypothetically, the attractive force in the textures is supposed to depend. The indications for employing one or the other of these means, I shall discuss under the head of special cases.

"2. When the exudation has coagulated, it constitutes a foreign body, which can only be removed by its becoming organized, or by its dying. In the one case it acts as a blastema, in which structures are developed that ultimately break it down, and render it capable of being absorbed, or converted into a tissue that becomes permanent. In the other case, it disintegrates slowly, constituting ulceration, or putrefies, forming gangrene, when it is separated from the economy in discharge or as a slough. It is by regulating the formative power of the exudation that we check or favour resolution; and we can only do this by employing those means which lessen or advance growth in all living organisms. Thus, locally, cold checks, and heat favours, growth; and we further observe that moisture, room for expansion, and locality, exercise considerable influence. Hence lotions favour, and pressure checks, organic development.

"With a view of diminishing the general excitement that prevails, tartar

emetic has been recommended, and to assist the absorption of the exuded matter, calomel is a favourite remedy: but the manner in which these act has been disputed, and whether it be by producing an influence on the nervous system, as a solvent of the effete matters in the blood, or by stimulating the excretions, is yet undetermined. In the same way, the action of counter-irritants, although undoubtedly useful in causing absorption of chronic exudations, is little understood, and belongs to the most mysterious department of therapeutics.

"3. In order to favour the excretions of the effete matters in the blood, purgatives, diaphoretics, and diuretics, alone, or combined, will be found very useful. The influence of these remedies, indeed, is not confined merely to removing matters which have been absorbed as the result of the secondary digestion; but by their depurating qualities, they favour indirectly the rapid absorption of the exudation.

"4. In tubercular exudation, the organization of which is imperfect, and leads to ulceration and wasting, we have to combat the preliminary phenomena of exudation locally, whilst we improve the nutritive powers of the economy generally. To meet the first indication, counter-irritation and an equable climate are useful; whilst for the second, we must overcome the dyspepsia, so hostile to a correct primary digestion, and supply the system with easily assimilable animal oils, without which nutrition cannot proceed.

"5. In cancerous exudations, we must endeavour to restrain the advance of growth, by cold, dryness, and pressure; attempt its eradication by incision, if this can be appropriately practiced; and diminish the tendency to accumulation of nutritive materials in the system, by keeping the excretory functions in full activity."—*Ranking's Abstract*, vol. xi., from *Edin. Month. Journ.*, April, 1850.

17. *Case of Hemiplegia in which Loss of Speech was a prominent Symptom.* By ROBERT DUNN, Esq. (*Proceedings of Royal Med.-Chirurg. Society*, June 25th, 1850.)—The subject of this communication died in a state of coma, on the 18th of April last, in the sixty-sixth year of her age. It was her third apoplectic seizure. She was of a mixed temperament, the sanguineous and nervous, and of active habits. Her first attack occurred on October 6, 1844, at four o'clock in the morning, up to which time she had enjoyed good health. The author, on being called, found her in a state of coma, with stertorous breathing, head hot, face flushed and turgid, mouth drawn down to one side, pulse full and labouring. She was bled and purged freely. In a few hours, she became conscious, but was found to be hemiplegic on the right side. Her recovery was quick: she regained the free and full use of the arm and leg, and, in a few months, her general health appeared to be completely re-established. One peculiarity remained, which arrested the attention of the author and led him to suspect the existence of some structural lesion of the encephalon—the habit of using one word for another, and of not applying the proper and appropriate names to the things signified. Her second attack took place on May 17, 1847. She was found by her daughter, on the morning of that day, lying in a state of insensibility, on her back, upon the floor of her bedroom. The author was struck with the contrast between the symptoms of this and those of the former seizures. There was the same deep coma, but no stertor; the face was pale, and bedewed with a cold, clammy moisture; the extremities were cold and the pulse was feeble, weak, and fluttering. An opposite treatment was indicated and followed. Ammonia and Hoffmann's anodyne were given freely. She was again found to be hemiplegic on the right side. Active reflex movements were excited by tickling the foot, but none could be induced in the upper extremity. She slowly but gradually improved, and ultimately got remarkably well; but she was paralyzed and speechless for the remainder of her life; all the senses were intact; the motions of the tongue were free, and there was no difficulty in deglutition. She was perfectly sensible, and took an interest in passing events. But she could not even say yes or no, and never got beyond the utterance of the monosyllable *dat! dat!* The conscious failure of the effort found expression in a hopeless shake of the head, and often in a gush of tears. The last and fatal attack took place on the 14th of April, when in the act of being undressed

for bed. She was found by the author in a state of extreme collapse, and comatose, with loud stertor, and with the left side as helpless as the right, completely paralyzed. The teeth were so firmly fixed that nothing could be got into the mouth, and she died on the fourth day of the attack.

Post-mortem examination.—At the post-mortem inspection, the upper two-thirds of the anterior lobe of the left hemisphere were found in a state of disorganization—a pulpy mass; the middle and posterior lobes were healthy; the corpus callosum was destroyed, except at its anterior and inferior reflection, and so also was the upper half of the corpus striatum, on the left side. The optic thalamus was likewise shrunken to less than half its natural size, its upper surface being greatly wasted. The anterior commissure and fornix were gone, but the corpora geniculata were sound. On the right side, the hemisphere was healthy, but when its lateral ventricle was laid open, a small and recent apoplectic clot was seen upon the upper and anterior surface of the corpus striatum; the whole of the upper portion of the corpus was in a state of *ramollissement*, and indications of white softening were seen also on the outer surface of the thalamus. The cerebellum and basis of the brain were healthy. The author considers the case to present some points of interest in reference to the localization of the faculty of speech. He observes that a great mass of evidence has been collected in support of the opinion of Gall, that the seat of the faculty of speech is in the anterior lobes of the brain. He refers to the *Memoirs of M. Belhomme and M. Bouillan*, read before the *Académie Nationale de Médecine de Paris*, in 1848, in support of Gall's opinion, and then cites two opposing cases from Andral's "*Clinique Médicale, Maladies de l'Encéphale*," in which the disease was in the corpus striatum. In considering this subject, he says: It is never to be forgotten that perfect speech—that is, the power of giving utterance to our thoughts in suitable and appropriate language—depends upon the due relation between the centres of volition and of intellectual action, and that, thus considered, the apparently conflicting evidence which has been adduced, as to the seat of the faculty of speech, admits, in his opinion, of a satisfactory explication. The thought is framed and moulded for expression in the centre of intellectual action, but the due agency of volitional power, and consequently the integrity of its seat of action, are needed to give it utterance. And while it is universally admitted that the cerebra are the great centres of intellectual action, he believes with Gall—and of which the present case affords corroborative proof—that the anterior lobes are the seat of the faculty of speech, and he asks, Is it not equally true that the corpora striata are the great centres of volition? and therefore, Does it not necessarily follow that loss of speech may alike result from diseases of the anterior lobes, or of such portions of the corpora striata as are in direct relation with them? He concludes by saying (in the case narrated), it is manifestly obvious that, with the disorganization of the left anterior lobe, its functional power was entirely abolished; and that although the right hemisphere was healthy—and there is every reason to believe, from the history of the case, that it maintained and exercised its function as a centre of intellectual action—still the volitional power was wanting to give utterance to the passing thought, for the corpus striatum was not in its integrity.

18. *Auscultatory Sign of Enlarged Liver.*—Dr. WALSHE has described, in the *Lancet*, a stethoscopic indication of enlarged liver, under the name of "*hepatic compression rhonchus*."

"It coexists with inspiration only, or indeed, seems to be rather superadded to it, not commencing until the inspiration-murmur appears almost at an end. Its evolution is peculiarly slow, drawling, and (if I may be allowed the expression) lazy, being, in this respect, the exact reverse of that of the crepitant rhonchus of pneumonia. It consists of a variable (but commonly a great) number of excessively fine, dry crepitations, rather superficial than deep-seated; is rendered audible by forced inspiration only, and may be heard in front, at the side, and in the back of the right half of the chest (least commonly in front, however), at or near to the upper edge of the liver. Its existence is completely independent of any lung affection; and I have never found it on the left side,

in these cases of liver enlargement. The characters of this rhonchal sound are so peculiar that a mere tyro would be able to distinguish it from all other varieties of rhonchus—it differs essentially, as I have just proved, from crepitant, subcrepitant, and dry crackling, pulmonary rhonchi, and from pleural rhonchus. Of its mechanism I am not prepared at present to offer any demonstration; but it appears to me to be most feasily explicable as follows: The lower portions of the lung, pressed upon by the enlarged liver, undergo a sort of creasing, or condensation, which, in ordinary breathing, interferes with their expansion. By forced inspiration, the portion of lung implicated will readily be understood to be *uncreased*, and so conceivably a series of sounds, such as I have described, is produced. Another fact strongly corroborates this hypothesis—namely, that it often ceases to be audible, for a time, after from one to five or six forced inspirations: the lung seems to require rest and time to be again creased up. Should further experience confirm this view of its mode of production, we shall have collateral support given to the doctrine I have long taught (and which, so far as I know, has not been refuted), that the crepitant rhonchus of pneumonia is formed, not in the air-cells or capillary bronchi, but in the pulmonary parenchyma itself. I am not able, as yet, to make any positive assertion concerning the frequency with which the rhonchus under consideration attends enlargement of the liver; but, on the other hand, I am in a position to affirm that, in no single case of notable increase of bulk of that organ which has fallen under my observation, since my first discovery of the rhonchus, have I failed to substantiate its existence. The sound may, it is true, escape detection on one or more occasions, but has never been absent for a series of days. On the other hand, I have not met with it in other conditions of disease; though, doubtless, if my theory concerning its formation be well founded, it will probably be ascertained to accompany a variety of conditions, causing slight compression of the lung.”

—*Lond. Journ. Med.*, August, 1850.

19. *On Fatty Diseases of the Heart.* By RICHARD QUAIN, M. D. (*Proceedings of Royal Medical and Chirurgical Society*, March 12th, 1850.)—The author commenced by referring to the circumstances which had directed his attention, five years ago, to the subject of these diseases, to the want of information which then existed, and to the essays which had since been published. He said there were two forms under which fat occurred as a disease of the heart. In one form, “fat tissue” grew upon and amongst the fibres—concealing them, in some cases, to such an extent as to lead to the supposition that the heart’s walls were composed of fat. In such cases, the fibres may still be found unchanged in structure, when the part is examined with the microscope, but more or less distorted in their course by the existence of large fat cells amongst them. He referred to the circumstances which seemed to direct the distribution of fat on the heart, and the parts where it was most abundant. In the second form, the muscular fibre became disintegrated, and degenerated into a granular or molecular fatty matter. In such cases, there was not of necessity any fat growth on or about the heart. He traced the progress of this change in the fibre, as shown by the microscope, and presented in drawings the appearances described. He showed the effects which the presence of this fatty matter in the place of muscular fibre must have on the physical characters of the heart, on its colour, its consistence, etc. He pointed out the circumstances by which the appearances were modified, as well as those which guided us in ascertaining its presence. In the next place, under the head of “*Preceding Observations on these Diseases*,” the author gives a very complete account of the extent of our previous knowledge on the subject. He followed by successive steps the progress of our information, from the period of the oldest authors whose writings bore thereon, to the age of Harvey, through subsequent writers, to the present time; he showed that the disease here described as true fatty degeneration of the fibres of the heart had been recognized, though, like fatty degeneration of the liver, the exact change in the fibre has not been distinctly ascertained. For information on this latter point, we are indebted to the researches of Williams, Peacock, Rokitsansky, Paget, Ormerod, and others.

The author took occasion here to contrast the characters of fatty degeneration of the heart with those of fatty degeneration of voluntary muscles.

Thirdly, he traced the circumstance under which these diseases occurred. He showed the relation which the growth of fat on the heart bore to the presence of its elements in the blood, and to the influence of the age, sex, habits of life, etc. of the individual on this condition. On the other hand, he described fatty degeneration as being a process of decay or true degeneration. He established this conclusion by a series of observations on the microscopical and chemical characters of the substance called adipocere, by experiments made by himself and others on the artificial formation of fatty matters in albuminous and fibrinous textures external to the body, and by the identity of the appearances in the artificial and the natural processes. He mentioned a great variety of circumstances under which this change took place in the living body, in which it must have occurred independently of any direct communication with the vascular system. He quoted the names of several authorities on these points, but more particularly, in reference to their pathological import, those of Williams, Paget, and Rokitansky; and established the inference that, when the vital properties of these higher animal substances were impaired, they yielded to the physical influences by which they were surrounded, and fell into a class of more simple compounds, shared by them with plants and minerals. He showed, by reference to Mr. Paget's observations, that the first step in this process was an impairment of the nutrition of the organ; and then he showed how this impairment occurred; first, the heart participating in a general malnutrition of the body; or, secondly, suffering locally by disease of the coronary vessels, or as the ultimate effects of endo- and peri-carditis. Numerical illustrations of these facts were given. The author then referred to the diseases which were found in association with this condition, they being chiefly degeneration of other organs, blood-vessels, etc. The most frequent seat of the disease, the age, the sex, the station in life of the individuals, and various facts in connection with the history of the disease, were also numerically illustrated. The characters of the so-described soft, flabby hearts, and the difference of opinion as to their nature, were discussed, and their relation to fatty degeneration considered.

Fourthly. The effects of these diseases were described as being those connected with impairment of structure and function, causing derangement of the circulation, etc. It was shown that of fifteen cases of extreme accumulation of fat on the heart, five had suffered from giddiness and coma, eight from syncope, and nine from short breath, languid circulation, etc. Of the fifteen, fourteen had died suddenly—viz., by syncope, or in an analogous condition, ten; by rupture of the heart, three; by coma, one. In reference to the effects of fatty degeneration on the structure and functions of the heart, the author showed that it was found in connection with hypertrophy in thirty-nine out of sixty-eight cases. He believed this to be due to hypertrophied hearts suffering from impaired nutrition more readily than other hearts—not, as Rokitansky supposed, to a disturbance of the balance of the nervous functions. The heart may be found unchanged in size, or decreased. The diminished consistence of the tissue permitted the occurrence of some of the most fatal lesions to which the organ is liable; viz., rupture, which took place in twenty-five of the sixty-eight recorded cases. In twenty cases, the rupture perforated the walls of the heart. In five other cases, it was incomplete, being confined either to the internal surface, the external surface, or in the substance of the heart. Rupture in the substance gave rise to the appearance called by Cruveilhier cardiac apoplexy. The blood effused in these cases may become encysted, and, losing its colour, give rise to the appearance of an abscess. Cardiac aneurism may also be formed. Illustrations of these facts were given from the tables of cases. The effects of fatty degeneration on the heart's functions gave rise to coma, and even apoplexy. The power of the right side of the heart being weakened, its cavities became filled, and the circulation obstructed. Illustrations from preceding writers on this point were given. The impaired powers of the left side of the heart were, on the other hand, a frequent cause of faintness or syncope; it was present in fifteen cases. This syncope may amount to

a mere feeling of faintness, or to so complete an arrest of the vital powers as to cause death. Sudden death occurred in fifty-four of sixty-eight cases, in twenty-one of which it was by syncope. Pain in the region of the heart and breathlessness, with certain peculiarities in each, were also numerically illustrated, and the causes on which they depended considered. The syncopal feelings, the pain, and the breathlessness may occur independently of each other, or in combination; they may thus give rise to the phenomena known as *angina pectoris*. It appeared to the author that this condition of the heart afforded in many cases a sufficient explanation of the pathology of this disease; and he expressed his opinion that many of the cases in which no disease of the heart had been observed, in which the symptoms were attributed to disease of the coronary arteries, or to fat on the heart, were in all probability examples of this fatty degeneration, which had so long been overlooked. He confirmed this opinion by the details of cases in the tables.

Hereditary predisposition, and the duration of the disease, were treated of so far as the facts permitted.

Fifthly. The symptoms and diagnosis of these diseases, more particularly in reference to fatty degeneration, were described. A distinction was drawn between those cases in which the heart, participating in the general impairment of the health, was perhaps equal to the demand made on its functions, and those in which the heart, being impaired by local causes, suffered out of proportion to the system generally. In the latter case, the symptoms were very unequivocal. In addition to the phenomena referred to in the preceding section, the pulse almost always gave indications of the condition of the heart. It was recorded in thirteen cases as being irregular; in fourteen as being weak; in eight slow; in a few as being full, regular, or quick; in none strong. The feeling of fatigue, from slight causes, particularly from ascending heights, the breathlessness, &c.—all progressive, from being so slight as scarcely to attract notice, to the most extreme suffering on exertion—were mentioned. An anxious expression of countenance, mental irritability, and copious sweats from trifling causes were also noticed. The physical signs of the disease, viz., feeble impulse, feeble first sound, extended dullness, perhaps a murmur with the first sound, from disease of the *columnæ carneæ*, or imperfection in the second sound, were also discussed.

Sixthly. The treatment, which in some cases had been found more successful than might have been supposed, was such as was calculated to improve the condition of the blood. We could not restore lost fibres, but we could render those which remained more effective; we could improve the material to be supplied by the blood, and we could render this fluid a better stimulant. The author referred particularly to the management of the digestive organs, to the use of iron, and the relief of paroxysmal attacks by the use of antispasmodics. Narcotics were not borne; and he mentioned examples of their injurious effects, as also the ill effects of exertion, or of over-exercise. Leeches to the region of the heart, followed by counter-irritation, had, in some instances mentioned, been found very useful in preventing the return of distressing paroxysms of dyspnoea and pain. The author concluded by a quotation from Boerhaave, aptly illustrating the formidable effects of this otherwise inoffensive material when it occurs in a situation to which it does not belong. He apologized for the length of his communication, which was due to the importance of the subject and its numerous relations. The paper was accompanied by tables, containing the abbreviated histories of eighty-three cases of these diseases, and by a number of beautifully executed drawings.

20. *Digiti Semi-Mortui: their connection with Chlorosis, and with Disease of the Brain and Spinal Cord.*—M. GILLET DE GRANDMONT has addressed a letter to the editor of the *Gazette Médicale* for May 25th, 1850, of which the following is a translation:—

The *Digitus Semi-mortuus*, mentioned by Dr. Marshall Hall,* is never other-

* London Journal of Medicine, April, 1849, vol. i. p. 327.

wise than the symptom, or one of the symptoms, of another disease, which is met with in young people, in adults, or in old persons.

Connection with Chlorosis. It is most commonly one of the symptoms of chlorosis in young girls; I have also observed it in pregnant women who had an anæmic appearance. In young females, sometimes one finger, but most generally several together, are affected. The temperature is decreased, as is easily ascertained by the hand or by the thermometer. The fingers are insensible to pretty strong pressure; a prick with a pin gives no pain, and does not draw blood, or gives a very slight rosy tint. The power of motion remains, but it is embarrassed, and appears to the patient as if mechanical. The appearance of the skin is that of wax; life seems to have deserted the organ. This condition is of varying duration; it is principally observed at rising from bed, and in the course of the morning; it more rarely appears during the day. Dry or alcoholic stimulating frictions, immersion in slightly tepid water, exercising the hand, as with a shuttlecock or skipping-rope, cause it to disappear; but in proportion as the other symptoms of chlorosis disappear under the influence of proper treatment, this singular symptom occurs less and less frequently, and at last disappears. Some of the chlorotic patients, who are subject to this singular affection, have their teeth of a dirty white colour, which indicates a predisposition to spasmodic convulsive affections. The patients who are affected with *digiti semi-mortui* complain, more particularly, among the other symptoms of chlorosis, of pain in the head, of involuntary stretching of the limbs, and sometimes of violent tremors of an hysterical nature. For several years I have very often met with this affection in chlorotic patients. My attention was first directed to it by a young lady of my family, who pointed out to me that "her fingers were dead." She used to strike them, rub them with a brush, or plunge them in very hot water; and it was only after a certain time that the affection disappeared—after continuing for half an hour, or even for more than an hour. This symptom is not constant; it appears at more or less distant intervals, according to the general state of the constitution; but it almost always accompanies, precedes, or follows, the nervous convulsive condition. Several young females have predicted an aggravation of their malady, on observing the phenomenon become more frequent or intense. As I have already said, the same treatment which removes the cause of chlorosis causes this affection to disappear. But when, as is often the case, patients, who are nearly cured, neglect to continue the use of iron, the dead fingers are among the premonitory symptoms of a return of the chlorosis.

Connection with Disease of the Nervous Centres. The *digitus semi-mortuus*, which is met with in adults and in old persons, differs in its characters from that which I have just described. In the latter case, the symptom is preceded by very slight formication, and the cooling is more gradual, but much more persistent; it is sometimes accompanied by a slight flexion of the finger on the palm of the hand, or of the phalanges on each other. In these cases, the finger does not seem so deprived of life as in the other; but the condition continues longer, and when sensibility returns, it seems like the result of a slight internal electrization, or succession of small electric shocks, as is observed in neuralgic affections. At other times, the finger trembles, and becomes slightly painful at the extremity. There is seldom more than one finger affected at first—principally the middle finger. The finger often remains straight, and cannot be easily bent by an effort of the will; it also seems affected with a sense of itching, or slight internal retraction. This affection is the precursor of a malady which proceeds slowly but continuously—an affection of the cerebral and spinal nervous centres. Too much attention cannot be paid to these slight premonitory symptoms; patients often do not observe that terrible diseases are often ushered in by them. I knew a man, once celebrated, who now drags out a painful existence, from not listening to the advice of his physician to cease from work. He considered his own malady as a slight nervous affection; and yet the *digitus semi-mortuus* was the first symptom of a severe disease of the cerebellum and medulla oblongata.—*Lond. Journ. Med.*, July, 1850.

21. *Case of so-called Chylous Urine.* By HENRY BENCE JONES. (*Proceedings of Royal Med.-Chirurg. Society*, June 11, 1850.)—G—, harness-maker, aged thirty-two, born in Trinidad, went to Scotland when eight years old, and had been in London for twelve years. In the winter of 1848-9, he observed that his urine was at times thick and white. This becoming more continuous, with increasing weakness, he gave up work on the 26th of May, 1849. Dr. Prout, among other things, gave him cod-liver oil, and he was sent to Margate for hot sea-baths. On the 19th of October, he came to me, complaining of severe pain in the loins, and he passed milky water in my room. The minute microscopical details of the appearance of this urine, which contained fat, albumen, fibrin, blood-globules, and alkaline salts of the blood, are given at length. The urine, each time it was passed, was brought daily to me. The chemical details, with an analysis of the blood, will be published in the next volume of the *Philosophical Transactions*. Previous to trying any medicines, careful observations were made on the effect of different diets on the appearance of the fatty matter in the urine. The first series of observations was 71—from Nov. 6 to Nov. 16—when diet was chiefly animal food; the second series was 91—from Nov. 16 to Nov. 30—when it was chiefly vegetable; the third series was 17—from Nov. 30 to Dec. 2—when it was chiefly animal. Hence total—

	Very Chylous.	Chylous.	Slightly Chylous.	Not Chylous.
Animal food, 88 observations, . . .	3 .	37 .	40 .	8
Vegetable food, 91 ditto, . . .	2 .	20 .	40 .	29

Whether the diet was animal or vegetable, the urine was most fatty after dinner; and least fatty, or not at all so, before breakfast. It was more frequently chylous after animal than after vegetable food; and it was oftener free from chyle before breakfast, when the diet was vegetable, than when it consisted more of animal food. The effect of pressure, by means of a belt, was then tried, the diet being chiefly vegetable.

	Very Chylous.	Chylous.	Slightly Chylous.	Not Chylous.
The 4th series, 27 observations, } from Dec. 7 to 11, }	2 .	7 .	6 .	12
The 5th series, 42 observations, } from Dec. 12 to 18, }	5 .	11 .	12 .	14
The 6th series, 53 observations, } from Dec. 18 to 26, }	1 .	16 .	17 .	19

From this, it appears that, during the days when the belt was tight, the urine was less chylous than on the days when the belt was loose. The difference was not very great, but the patient stated that the pressure relieved the pain in the back very much.

Matico was then tried. Seventh series, 211 observations, from Dec. 26 to Jan. 28—7 very chylous, 27 chylous, 69 slightly chylous, and 108 not chylous.

In much stronger doses, eighth series, 89 observations, from Jan. 29 to Feb. 11—1 very chylous, 10 chylous, 28 slightly chylous, 50 not chylous.

By comparing these results with the observations when no medicine was taken, the improvement is very evident.

Gallic acid was then tried—a drachm in the course of the day. Ninth series, from Feb. 13, after breakfast, to Feb. 16, 26 observations: after the 14th, no fatty matter was observed in the urine; from Feb. 16 to 20, 19 observations, no fat or albumen present: from Feb. 20 to March 4, 75 observations, no chylous appearance; from March 4 to 24 he was at work, 98 observations, no chylous appearance; from March 24 to April 6, 72 observations, no chylous appearance. The gallic acid was stopped. From April 6 to June 14, 350 observations. The urine on each occasion was free from chyle or albumen.

The results from Nov. 6 to June 14 are best shown by supposing 1000 observations in each series had been made.

	Urine chylous in different degrees.	Free from Chyle.
1. On animal food,	968 times.	32 times.
2. On vegetable food,	910 "	90 "
3. With pressure, belt loose,	667 "	333 "
4. With pressure, belt tight,	638 "	362 "
5. On matico,	474 "	526 "
6. On gallic acid,	17 "	983 "
7. After gallic acid,	0 "	1000 "

The gallic acid was taken for 53 days: on the third day, the albumen and fat disappeared from the urine, and for 69 days after the medicine was left off, the disease did not reappear, and the patient has resumed his work for 102 days.

A second case is related, in which the urine was once observed to be chylous, in St. George's Hospital in 1840. Three months afterwards, this patient died at Plymouth, and on post-mortem examination no disease of the kidney was perceived.

22. *Retention of Urine in the Kidney for nine days.* (*Proceedings of Med.-Chirurg. Society.*) By A. W. GABB, Esq.—Mr. C. T., fifty-five years of age, was suddenly taken with pain in the left side, and vomiting, on the night of the 23d of March.

On the 25th, he had excessive pain and tenderness of the abdomen, and the urine was scanty. The bowels obstinately constipated.

26th.—He passed about an ounce of water at six in the morning.

27th.—Constant desire to make water, but when the catheter was passed into the bladder, no urine was found there.

28th.—Slight delirium; profuse perspiration; return of the sickness.

29th.—Still no urine; sickness less.

30th.—Increase of pain, and return of sickness.

31st.—Less pain and sickness; but no urine.

April 1st.—Catheter again passed, and no urine was found in the bladder. Three pints at least, of darkish-brown fluid, not smelling like urine, but looking like bile and water, were vomited up.

2d.—Sickness and faintness continued.

3d.—Hiccough; great drowsiness, with delirium and sickness.

4th.—Four A. M. Great increase of pain, and suddenly he passed about two pints of clear urine, and a very small stone, which consisted of oxalate of lime, and did not weigh half a grain. (It was shown to the Society, but it was so small that it could hardly be seen.)

After this, he had a rather troublesome attack of diarrhoea, which lasted three days, the consequence, perhaps, of medicine.

On the 12th, he was out and about; and he remained well on the 3d of June. In this case, for nine whole days no water whatever was passed, and for three days previously, a very small quantity of urine was excreted.

Mr. Charles Hawkins regarded the case just detailed as almost unique. The case was manifestly one of retention of urine in the kidneys, or their pelvis. The retention was the result of spasm, most probably, as the calculus was too small to impede the flow of urine. Had any other fellow witnessed such a case?

23. *Case in which the Urachus remained open, and a ring-shaped Calculus, formed on a curved hair in the Bladder, was extracted through the Umbilicus.* By THOMAS PAGET, Esq.—[In our number for Jan. 1848, p. 313, will be found recorded, by Dr. R. G. Cabell, of Virginia, a case of pervious urachus in an adult. Another example of this rare malformation has recently (June 11) been communicated to the Royal Medical and Chirurgical Society, by Mr. Paget.]

J. C., aged forty years, had suffered for more than a year from frequent and painful micturition. On sounding, a calculus was readily detected. He mentioned that upon attempting to make water, and during violent efforts at work, a portion of the urine sometimes escapes at the navel, which is open, and that, so far as he knows, it has been so from his birth. The catheter introduced into

the bladder through the urethra was easily made to appear at the umbilical opening. Thinking that the stone might be extracted through this aperture, Mr. Paget distended the bladder to the utmost with warm water, the umbilical aperture being tightly plugged, the patient reclining with his head lower than the pelvis, and with the intention of removing the plug, thinking that the calculus might be flushed out with the water; but it then occurred to him to try first the finger at the umbilicus. It readily passed, and when at full length down the unnatural passage, caught within the circle of the calculus sufficiently to enable him to drag it to the side of the bladder and extract it. The nucleus was found to be a hair, and on carefully truncating it, the projecting extremity was seen. The phenomena connected with the opening are thus described: There is a circular deficiency in the linea alba an inch in diameter, its margin being thickened, and of cartilaginous hardness. Through this protrudes a hernia of the size of a goose-egg, which in lieu of ordinary integument is covered by mucous membrane, the surface, however, becoming dry when exposed for any length of time. He never makes water whilst the hernia is out, for, when called to an effort for that purpose, the first act of the bladder is gradually to draw into the abdomen the whole of the protruded substance; its first contractions have no other effect, and it seems not to have the power to force the urethra until that is accomplished. At the latter part of this act, at the instant of the disappearance of the hernia, there occurs a rather forcible jet of urine from the opening; the flow from the urethra also commences at this juncture, and the bladder is emptied in the usual way, the jet from the umbilicus ceasing not to be renewed, except by a violent accelerating action of the expulsor muscles. He can retain a pint of urine. By watching the first contractions of the bladder, it becomes evident that to the thickened margin of the umbilical aperture are attached the muscular fibres of the bladder extended along the urachus. The pouch of the hernia is formed by eversion of the posterior part of the neck only, which is of course attached to the upper half of the aperture, and when protruded presses upon the hard edge of the lower half sufficiently to prevent the escape of urine, except under straining efforts of the abdominal muscles. He wears a girdle, with a thick pad of flannel to catch the urine. With the extraction of the calculus, all the bladder symptoms ceased, and it was thought inadvisable to interfere with the congenital defect.

24. *Recent Discussion on Acute Articular Rheumatism in the French Academy of Medicine.*—Notwithstanding all that has been written on the subject of rheumatism, it must be confessed that neither its true pathology nor appropriate treatment has been hitherto discovered; or, if discovered, they at least have not been as yet generally accepted. It is obviously of the utmost importance that the true principles of treatment, in a disease so common and so destructive, should become established; and in the present state of our knowledge there seems no prospect of effecting this, except by the application of the numerical method to large numbers of clinical observations carefully recorded. These observations must include all the modes of treatment which have been vaunted as successful, whether they are purely empirical or founded upon *rational* indications. One other mode of solving the difficulty certainly suggests itself, viz. to unravel the complicated pathological questions regarding the nature and causes of rheumatism, and then to apply to therapeutics for the appropriate remedies. But although this would be undoubtedly the more satisfactory mode of procedure, its accomplishment must at present be regarded as impossible, involving as it does the perfection of medical science, and the establishment of an unimpeachable code of therapeutics—the golden age of physic. While, therefore, we are of opinion that no effort should be spared to investigate the pathology of rheumatism, and firmly believe that the knowledge thus acquired will be found invaluable in directing to a rational mode of treatment, we are far from undervaluing the information drawn from the experience of physicians who have treated large numbers of cases upon a fixed plan, even when their practice rests upon what we ourselves consider an incorrect pathology.

A recent discussion on rheumatism, in the Parisian Académie de Médecine, gives us the opportunity of laying before our readers the opinions of some of

the most distinguished practitioners of France. The subject was introduced by M. Martin-Solon, who read a report upon a memoir of M. Dechilly, physician to the Hospital of Vaucouleurs (Meuse), on the treatment of acute rheumatism by the early and repeated application of large flying-blisters to the whole of the joints affected. M. Dechilly's practice is, if the patient be plethoric, to commence with a general blood-letting; if the brain, pericardium, or pleura be implicated, he applies leeches locally; as for the inflamed joints, blister after blister is had recourse to, until the disease is expelled from the system. We find no mention made of the use of internal remedies, except small doses of nitre.

Of the efficacy of this system, M. Martin-Solon reports favourably; but, in most of his own clinical experiments, he seems to have combined the use of large doses of nitrate of potass, or of sulphate of quina, with the vesicant treatment. He finds that, when the disease is not very intense, or confined to a small number of articulations, it may often be subdued in a few days by the simple application of blisters. Thus some of M. Dechilly's cases terminated favourably on the fourth, fifth, or seventh day. But when the affection is more acute and diffused, its duration is generally much protracted, for the rheumatic inflammation passes in succession from joint to joint, notwithstanding the use of the blisters. In one of M. Dechilly's cases, convalescence was not established till after eighteen days of treatment, and the application of thirteen blisters. Neither does this treatment prevent relapses, for one of Dechilly's patients, who was twice largely bled at the arm, twice leeched, and five times blistered, with considerable relief to the articular symptoms, was six days afterwards attacked with rheumatism in the chest (pleuritis?), which yielded to further depletion, but was succeeded by rheumatism in the muscles of the left arm. M. Martin-Solon considered the practice of repeated blistering especially applicable to cases accompanied with constitutional or morbid exhaustion, or with symptoms referable to the digestive organs forbidding the use of contra-stimulant internal remedies. He had himself obtained incontestable advantage from the use of sulphate of quina, given to the extent of one and a half to three grammes in the course of twenty-four hours. But the practice which he generally followed was that recommended by Brocklesbey in 1764, viz., the administration of nitrate of potass in large dose. He prescribed from 24 to 36 grammes (6 to 9 drachms) in three litres (5 lbs.) of lemonade, or of some agreeable infusion with sugar, to be taken in the course of the day. It was necessary that the nitre should be given in a large quantity of fluid in order to avoid its irritating properties. In a few cases, complicated with endocarditis, he had likewise ordered blood-letting and leeches; but, in general, he trusted to the nitre alone.

M. ROCHOUX regarded rheumatism as an inflammation; nay, as the very type of inflammations.

M. BOUILLAUD was far from allowing, like M. Martin-Solon, that nitre, quina, antiphlogistics, and blisters might be had recourse to indifferently. If the disease were confined to the joints, its grave character would be much diminished; but it was well known that it did not rest there; and that too frequently organic diseases of the heart arose when the patient was regarded as cured. Woe to the patient in whose case rheumatic fever lasted more than fifteen days? Even if the articular symptoms have yielded, he would almost certainly be sooner or later the victim of incurable organic disease. M. B. had no confidence in modes of treatment directed against the pains of the joints; it was the visceral, and especially the cardiac, complications which should guide the physician's practice. He then proceeded to describe the success which he believes he has obtained by venesection practiced "*coup sur coup*." In more than 600 cases, this treatment had never disappointed him, removing the most intense rheumatism within a week, and surely preventing the lesions of the heart. But to insure its efficacy, it was essential that this treatment should commence on the first day of the disease if possible, or at latest before the termination of the first week. He denied the specific nature of the rheumatic process; believing it to be a disease of the system, "*une maladie générale*;" an inflammation, just

as pneumonia and pleurisy were inflammations, and no more dependent upon a specific virus than these two diseases were.

M. J. GUERIN made some remarks upon the effect of subcutaneous puncture of the articulations in rheumatism. He could not account for the relief which he had observed to follow this practice. It could not act antiphlogistically, for only a drop or two of blood escaped.

M. GERDY believed that rheumatism differed from ordinary inflammation in the frequent and sudden alterations of its site; in its want of periodicity (for all true inflammations had periods during which they augmented in intensity, or were stationary); and, finally, in the lesions which were observed in fatal cases.

M. GRISOLLE argued against the inflammatory nature of rheumatism, because the fever was often observed to continue when the articular pains were gone, and when yet there was no evidence of internal mischief; because rheumatism never terminated in gangrene; because it never terminated in suppuration. The cases in which this latter termination was supposed to have occurred, he regarded as examples of purulent infection, with pains in the joints, and subsequent effusion of pus. Besides, if rheumatism were inflammatory, why, when seated in the joints, did it not follow the same course as local inflammations, which sometimes manifested themselves during an attack of rheumatism? Why should the pleurisies and pericardites, in such circumstances, follow one course, while the pretended arthritis followed another?

He denied the efficacy of the practice of venesection, "coup sur coup." Sydenham, who was once an advocate for profuse bleeding, towards the end of his career condemned the practice as useless. At Montpellier, the system once was to bleed thrice a-day; but there, too, it was now abandoned. M. Legroux, who had employed the so-called "nouvelle formule," and had acquired his knowledge of it from his master, M. Bouillaud, had recently publicly declared that it only served to prolong the convalescence, to favour complications, and to induce chloro-anemia.

M. PIORRY, after alluding to some original experiments of his own upon the amount of blood which can be abstracted without inducing death, and after claiming for himself the priority of the application of the "nouvelle formule des saignées suffisantes," proceeded to develop his own views regarding the pathology of rheumatism. Under the term acute articular rheumatism had been united conditions the most dissimilar, both in their nature and in the mode of treatment which they require. He instanced the fever, accompanied with acute articular pain, which is sometimes observed after delivery, and what is known in this country under the name of gonorrheal rheumatism, as differing essentially from the disease under discussion. In true rheumatism, there were two elements under which the symptoms might be ranged. One of these was the state of the blood, whose serum was surcharged with fibrin; this condition he denominated "hémité." The other element was the "arthritis," a most decided inflammation, often affecting several joints together, or in succession, and very rarely terminating in suppuration.

The following was the treatment which he considered applicable to "hémit-arthritis." In the early stage of the disease, while the morbid condition of the blood was still well marked, the physical examination of the heart, arteries, veins, capillary system, liver, lungs, &c., demonstrated the presence of an excessive quantity of blood; and, at this period, it was advantageous to bleed abundantly, once, twice, or even thrice a-day. The amount and frequency of the venesection should be directed by the physical signs referable to the viscera, and by the properties of the blood drawn. It was rarely necessary to bleed after the third day. Sometimes the disease was thus subdued within twenty-four hours. In chronic cases, or in those in which the symptoms had already existed for several days, cupping and leeching might be substituted for general blood-letting. In cases of relapse, the treatment of the acute stage was to be had recourse to. In all cases, in order to combat the "hémité," and prevent endocarditis, large quantities of diluent drinks should be given, emollient applications should be made to the joints, and great advantage would be derived by keeping them in an elevated position. He had never seen good effects from

the use of quina, except when the symptoms recurred with periodicity, when the spleen was implicated, or when, after the acute symptoms had abated, neuralgic pains, connected with the articular lesions, were observed. Tartarized antimony might be useful from its property of producing serous discharges, but its good effects were more equivocal than those of blood-letting, and its use was attended with more danger. Opium, and other narcotics, he condemned as remedies empirically directed against the mere symptom of pain, whereas this symptom was the result of the pathological conditions which ought to be the subject of treatment. He had never obtained any species of success from the employment of narcotics, of nitre, or of any of the vaunted specifics against rheumatism. Blisters were most useful when the disease continued to cling to certain joints after the diseased condition of the blood (*hémite*) had disappeared. "In short," said M. Piorry, in concluding, "acute articular rheumatism is not a simple disease always demanding the same treatment. It is a compound of different *organopathic* elements, which are far from identical in degree in every case, and which each present particular therapeutical indications. According to my doctrine, rheumatism is not to be combatted by a formula indicated *à priori*, but by directing against the different lesions which present themselves, means of cure adapted to and regulated by the state of the organs of individuals who are the subjects of treatment."

M. PARCHAPPE argued that acute articular rheumatism is a disease of the whole system (*une maladie générale*). He maintained that all such diseases have determinate periods of development and duration, which it was not in the power of the physician to abridge. He consequently deprecated as futile any attempt to *jugulate* rheumatism, and preferred a modified expectant treatment, including antiphlogistic remedies adapted to each indication which might present itself—remedies to relieve symptoms, to combat complications, to prevent the rheumatism from passing into the chronic state, and to *lessen the duration of the disease*.

[How to lessen the duration of a disease which has a *determinate* duration, we are not informed.]

Those who regarded rheumatism as a local inflammation, appealed, in support of their opinion, to the nature of the local symptoms; to the concomitant fever—an inflammatory synocha; to the state of the blood, which always shows the inflammatory buffy coat; to the inflammations with which the disease was often complicated; and, finally, to the effect of antiphlogistic treatment.

He repudiated the axiom—*naturam morborum ostendit curatio*. To support a theory by the alleged good effects of a mode of treatment suggested by the theory, was to reason in a circle. The inflammatory nature of the articular lesions, and of the complications, did not necessarily prove that the disease was an inflammation. There were diseases non-inflammatory in their nature, which included among their local manifestations inflammations proceeding even to suppuration. He instanced variola. As to the state of the blood, he admitted that the great preponderance of fibrin might be regarded as an indication of the inflammatory diathesis. He pointed out a fallacy in the ordinary mode of calculating the amount of fibrin in analysis of the blood. The fibrin is always directly estimated, being obtained by agitating or stirring the freshly-drawn blood. But as a certain quantity of plasma containing fibrin is included within the envelops of the blood-corpuscles, it is plain that a corresponding amount of fibrin must elude the detection of the analyst. The proportion of fibrin obtained must consequently be modified by the variable amount of the blood-corpuscles, being largest when the corpuscles are present in smallest number.

M. BOUCHARDAT said that in rheumatism there were morbid elements which might exist simultaneously or separately. The inflammatory element was often present, as was shown by the buffy coat of the blood. This product, according to M. B., consisted of three principles—1st, a matter identical with pure albumen, and capable of dissolving in water faintly acidulated, which he termed *albuminose*; 2d, a substance insoluble in acidulated water, presenting a great analogy with the characteristic element of epidermis and epidermic productions; 3d, a matter which gelatinizes when boiled in water;—it was this matter which characterized the inflammatory buffy coat, and which was *not* present in fibrin.

He detailed a series of experiments, which he thought proved, beyond all question, the existence of this gelatinous principle in the blood of acute articular rheumatism. But besides the inflammatory element, there was a rheumatismal element which he could not better define than as *a particular state of certain organs*.

Adopting the result of observation, that acute rheumatism, like pneumonia, &c., could be produced by exposure to cold, he proceeded to inquire what could be the effect produced upon the system by such exposure? The secretions, including those of the skin, might be immediately suppressed or altered. The characteristic elements of the cutaneous secretions might either be abnormally developed in other tissues or membranes, or might simply cease to be produced. All the apparatus continually in operation in the living body, furnishing secretions, either acid or alkaline, might be regarded as an assemblage of batteries, whose poles might be reversed by the influence of a perturbing cause, or whose regular action might cease for a time. Thus, membranes generally lubricated with alkaline fluids might be brought in contact with fluids faintly acid, whose degree of acidity did not exceed that of the perspiration or of muscular tissue; and this modification of the secretions, trifling as it might seem, was yet sufficient, under the influence of the temperature of the body, to effect important chemical changes on the tissues containing gelatine. He had, in fact, shown that membranes might even be dissolved by immersing them in water at the temperature of $+38$ Cent. (100 Fahr.), containing less acid than the perspiration. According to individual constitutions, such perversion of secretion might be often produced in the same subject, either in the membranes of the articulations, or in the respiratory apparatus, under the influence of cold; and the result would be, according to the parts affected, acute rheumatism or pleuro-pneumonia.

In reviewing the modes of treatment, M. B. admitted the propriety of blood-letting, but expressed some doubts as to the assumed harmless nature of copious venesections practiced at short intervals, and as to their utility when opposed to the grave complications met with in certain cases.

No treatment was better than that by sulphate of quina—yet in small dose it was useless, and in excessive dose it was a poison. The quantity given should be such as to produce some temporary disturbance in the system, but beyond this limit it should not be pushed. One to two grammes (15 grs. to 3ss.) in twenty-four hours, and in divided dose, was sufficient for an adult. This treatment abridged the duration, and diminished the intensity of the disease: it was not yet shown to be efficacious in preventing complications. Nitrate of potass was a valuable remedy, and might even be given to the extent of from 40 to 60 grammes (617 to 926 grs.) in twenty-four hours; but it must be given in a large quantity of water. The dose must be administered regularly at stated intervals throughout the whole twenty-four hours, and must not be persisted with unless the kidneys act well; for, according to the experiments of Orfila and M. B., the presence of 20 or 30 grammes (309 to 463 grs.) in the blood may occasion death.

Digitalis, squill, and colchicum, he did not consider sufficiently trustworthy or manageable. Of tartarized antimony in contra-stimulant doses, he had no better opinion. He allowed that opiates were, in certain cases, of service, not only in relieving pain, but even in favourably influencing the progress of the disease. Blisters were theoretically indicated at the very commencement of the disease, and he recommended that their dimensions and activity should be proportionate to the violence and extent of the disease under treatment.

A discussion followed, between M. Bouillaud and M. Grisolle, regarding the possibility of cutting short the disease by repeated blood-letting. From this discussion, and from the comments of the different journals, particularly of the "*Gazette des Hôpitaux*," it would appear that M. Bouillaud stands almost alone as the advocate of his "*nouvelle formule*," and that he labours under some illusion as to the duration of the disease in the cases to which he continues to apply it. M. Michel Lévy next proceeded to analyze the evidence in favour of M. Dechilly's proposal, which he proved to be defective, and moved that the Académie should request the author to *pursue and complete* his researches on the treatment of acute articular rheumatism by the exclusive use of blisters.

This motion was adopted by the Académie.

[In the course of the above discussion, we find no mention made of certain modes of treatment which, in this country, have numerous advocates. We allude to the employment of sudorifics, of calomel and opium, and of aconite. We desire to express no opinion upon the several merits of these modes of practice; but surely they were at least worthy of notice in a discussion in which so many contradictory views were expressed upon the appropriate treatment of this very common and too destructive disease. Can it be that the accomplished physicians, who took part in the debate, are not well informed as to the practice pursued in their own day in Britain?]*—Monthly Journal of Med.*, July, 1850.

25. *Phosphate of Ammonia, and its employment in Gout and Rheumatism.*—The attention of the profession was first called to the value of the phosphate of ammonia as a remedy for gout and rheumatism, by Dr. Thos. H. Buckler, of Baltimore, in an article in this Journal (see number for Jan. 1846, p. 108). A paper on the subject has recently (April 27th, 1850) been read before the Westminster Medical Society by Dr. S. EDWARDS, in which the author remarked that no mention is made of the therapeutical uses of this salt in any of the standard works of *materia medica*, and subjoined the following description of it, being an epitome of the researches of Mitscherlich upon it:—

Phosphate of Ammonia.—The mutual action of anhydrous phosphoric acid and ammonia has not been studied: they probably give rise to *amide*. The neutral phosphate of ammonia may be obtained pure by saturating phosphoric acid with ammonia, or carbonate of ammonia, and carefully evaporating, so as to avoid the production of an acid salt. It may also be formed by adding carbonate of ammonia to the acid phosphate of lime, obtained from bone earth, till no further effervescence or precipitate of phosphate of lime follows filtering, and evaporating; taking care, however, to leave slight excess of ammonia. The solution, left to itself, deposits the salt.

When taken internally, in the ordinary dose of ten grains, it produces no very sensible physiological effects; it occasions, sometimes, a slight feeling of nausea, accompanied with heat of the epigastrium, immediately after which, if the surface be kept warm, it acts as a stimulating diaphoretic. It is also a diuretic. When used in cases where *uric* acid exists in large quantity in the system, it shortly produces a large deposit of urates in the urine. The author then made some few remarks as to the proximate causes of gout and rheumatism, considering them in the light of blood diseases, arising from a morbid matter circulating in the blood, originally formed in the primary and secondary assimilating processes, thereby occasioning a disturbance of longer or shorter duration, in the nutrition of parts to which it is attracted. He considered there was sufficient analogy between the two affections to cause him to view them as mere varieties of the same disease. Reference was made to the opinions of Barthez and Chomel, who considered it almost futile to attempt a diagnosis beyond marking the parts affected in each, and that this was objectionable, as referred to by Dr. Todd, who asserts, "Gout shows, at first, a decided predilection for the small joints—those of the hand and foot—but in time *all* the articulations are obnoxious to it, and not only they, but also tendons, ligaments, bursæ, and synovial sheaths." Dr. Edwards referred to the case of an old lady who had been troubled with gout for some years. The metatarso-phalangeal articulations of the great toes frequently threw out chalk-stones, and a fluid containing urate of soda; when this subsides, she is troubled with chronic rheumatism of the whole body, but on the gout and secretion returning, the rheumatic pains entirely leave her, showing such a connection between the urate of soda and the rheumatism as to warrant the belief of their being cause and effect. Dr. Edwards then went on to state that, from a number of chemical and microscopical experiments, he had arrived at the conclusion that these diseases had an excess of lithic acid for their essential cause; that the elements of this acid and its combinations are supplied by the nitrogenized elements of the food, as well as by the changing tissues of the body, a sufficient reason why the disease should attack the young and badly nourished, as well as the older, more plethoric, and they who live high. Dr. Edwards confirmed the fact that

in gout uric acid existed in the blood, and in several cases he had obtained rhomboids of uric acid from the same fluid in rheumatism in much larger proportions than in health, but not to the same extent as in gout. This was accounted for from the circumstance of the lithic acid being partially thrown off by the skin and kidneys in the one, whilst it was retained in the system in the other. Dr. Edwards had experimented in fifteen cases, and made reference to Simon, and also to Becquerel's cases in proof. The urate of soda had been considered to be a secretion peculiar to gout. Dr. Edwards referred to Dr. Macleod's statement of the articular cartilages in capsular rheumatism, being covered with it occasionally; also to a case of rheumatic gout, given by Dr. Golding Bird, where an eczematous eruption of the legs was frosted over with microscopic crystals of it; also, in a case which he had himself observed, where a patient had died of heart affection, deposits of urate of soda existed in the valves of the heart. This patient had had rheumatic fever, but not gout. Reference was made to the connection between rheumatism and granular disease of the kidneys, and some other renal affections, in which the relative proportions of the ingredients in the urine are diminished, and, according to Rayer, are found to exist in the blood and serous effusions; and, in the examination of the urine, Prout and Christison state, according to their observations, the lithates are most strikingly deficient. The author considered himself justified in asserting that in these two diseases there was a large and undue proportion of lithic acid or its compounds in the system, and asked, may not this deposition, then, occasion such an extent of acrimony in the fluids of the body as to irritate, and excite to a morbid action, the lymphatics and minute terminations of the arteries in the several parts of the body, and not improbably of the lining membrane of the larger arteries, becoming, in fact, a source of irritation wherever deposited, more especially in parts such as the joints and sheaths of the ligaments and tendons, which, being inextensible, would sooner probably become affected by such distempered excitability? Dr. Edwards then spoke of the physiology of the beneficial action of the phosphate of ammonia in these affections. On being taken into the system, and coming in contact with the uric acid or urate of soda, it became decomposed, a phosphate of soda and urate of ammonia would be produced—thus exchanging a very insoluble for very soluble salts; but this was not all, for Baron Liebig had shown that the phosphate of soda has a remarkable effect upon uric acid, rendering it soluble with facility in water. By these means, therefore, the free and combined uric acid existing in the system in these diseases will be dissolved and rendered capable of easy elimination by the kidneys. Dr. Edwards then remarked that he had used the phosphate of ammonia in almost every variety of gout and rheumatism, and almost always with the most beneficial effects. He had frequently warded off attacks of gout by its early employment. Before using it, he generally prefaced it by a purgative of calomel and colocynth, or some other, and in the acute articular rheumatism adopted the usual local and general antiphlogistic treatment. Under its use, the tendency to attack fresh joints had diminished, and the chronic form, so frequently left behind from the acute, generally obviated, and when existing usually yielded in a few days. It had been found extremely beneficial in some of those cases of a local character which bear a resemblance to neuralgic disease. Dr. Edwards also drew attention to an important fact in connection with the use of this salt in *acute rheumatism*. He had employed it in fifteen cases, and in no one had *heart* symptoms accompanied it. When it is remembered that heart complication occurs in about one-fifth of the cases of rheumatic fever, the subject deserves attention. Dr. Edwards had found it of great use in subduing the swelling which so frequently occurs subsequently to gout, and spoke highly of its powers in preventing the formation of chalk-stones, as well as arresting their increase when forming. He also described its solvent power as great in uric acid gravel, and asked, might it not be available in uric acid calculi? He had given it a comparative trial with phosphate of soda and benzoic acid, and found it far more useful in its effects. In some few cases in gout, he had used a lotion of it, with good and soothing effects, especially where a concretion of urate of soda appeared to be forming.

[We do not find in the communication of Dr. Edwards any allusion to the paper of Dr. Buckler. This either evinces an imperfect sense of justice or great ignorance. The former if he was acquainted with the paper of our countrymen; the latter if he was ignorant of it, as it has been noticed in all the English Journals.]

26. *Nux Vomica as a Remedy in Hay Fever*.—G. F. GREAM, Esq., has used, at the suggestion of Mr. Hammerston, of St. George's Hospital, the nux vomica, with the best effects, in the cure of hay fever. He uses the tincture of nux vomica of the Dublin Pharmacopœia, in doses of ten drops gradually increased to twenty three times a-day.

At the same time, he applies to the lining membrane of the nostrils, as high up as possible, an ointment composed of one drachm and a half of Goulard's extract, two ounces of spermaceti cerate, and a few drops of oil of bergamot, or of roses.—*Lancet*, June 8, 1850.

27. *On very Minute Doses of Tartar Emetic in Phthisis and Asthma*.—In vol. xxxi. of the *Bulletin de Thérapeutique*, M. BERNARDEAU gave an account of the great benefit he has seen derived from the administration of minute doses of tartar emetic in the hectic of phthisis. Since that period, he has used it in other stages of tubercularization, and in several cases of asthma, with excellent effects. He gives from three to six pills in the twenty-four hours, each containing one twenty-fifth of a grain. By their use, the cough, dyspnoea, and inordinate action of the heart become calmed, and in fact all the good effects of morphia, without its inconveniences, seem to be produced.—*Brit. and For. Med.-Chirur. Rev.*, from *Bull. de Thérap.*, vol. xxxviii. p. 311.

28. *Habitual Use of Opium*.—The number of the *Monthly Journal of Medical Science* for June, 1850, contains an abstract of a highly important paper by Mr. R. LITTLE, of Singapore, in which is given a very interesting account of opium-smoking in China, the mode of preparing the opium for that purpose, and the effects of the practice on health and longevity. From this paper, we make the following extract:—

“A difference of opinion prevails as to the ultimate effect on the health, when opium is used in this way so often as to constitute a habit. It was long universally thought to undermine health and abridge life. But in recent times doubts have been raised on this head. Dr Burnes was led to conclude, from observation when at the court of Lahore, in the time of Runjeet Singh, that the habit of eating opium does not tend to shorten life. More lately, Dr. Macpherson came to the same conclusion, from what he saw of opium-smoking among the Chinese at Canton. And in Europe, since the inquiries on the occasion of the jury trial at Edinburgh in 1832 connected with the insurances of the late Earl of Mar, it has been thought by not a few persons of weight that the habit of eating opium, or drinking laudanum, may be by no means so injurious to health and longevity as its immediate effects on digestion and the nervous system would lead one to prognosticate. It may be true, as these skeptics have stated, that some people, long abandoned to the vice, have lived to a good old age, miserable from its immediate effects, yet not unhealthy. But the experience of most travellers, who have witnessed its effects on a large scale in the East, is directly the reverse; and although this proposition may be in some measure liable to the objection that it is the statement of casual observers merely, it is amply borne out by the results of careful and extensive inquiries at Singapore. These inquiries were made by personally examining the owners of opium shops, the smokers who frequented them, the prisoners in the house of correction, and the paupers of a poor-house supported by voluntary contributions. The following information is the result.

“As the habit grows upon its unhappy victim, the first evils experienced are disturbed sleep, watchfulness, giddiness, sometimes headache, capricious appetite, a white tongue, frequently costiveness, indescribable oppression in the chest, and haziness of the eyes. Afterwards, a copious secretion of mucus takes place from the eyes, and often from the nose also; digestion becomes much impaired,

and micturition difficult; a mucous discharge begins to flow from the organs of generation; the sexual organs, at first preternaturally excitable, gradually lose their tone; the body wastes, the muscles lose their torosity, and the bones are affected with dull gnawing pains for some hours in the morning. By and by, the figure stoops, and a peculiar shuffling gait is acquired, by which alone a practiced eye may recognize an old opium debauchee. At the same time, the eyebrow droops, the lower eyelid becomes dark, the eye itself seems to sink and grow dim, and the whole expression is that of premature old age. In both sexes, the procreative power is greatly lessened, and in those women who nevertheless do bear children, the secretion of milk is defective. The influence of the habit on the generative functions is indeed so decided that were it not for fresh arrivals from China and other parts of the East, the population of Singapore would very soon be seriously diminished.

"Still there may be no structural derangement. At length, however, food and drink are vomited almost constantly when the system is not under the primary action of a dose; there is incessant gnawing pain in the stomach when its effect is off; diarrhœa comes on, relieved only by fresh indulgence, and dysentery sometimes supervenes; a turbid mucous urine is discharged with unusual frequency, the result sometimes of renal disease; and, among affections of the kidneys, Bright's disease is not uncommon. In others, difficulty of breathing is a prominent symptom, increasing gradually to an urgent sense of suffocation, and depending generally on œdema of the lungs, or effusion into the pleural sac. In others, irregularity and feebleness of the pulse, with pain in the cardiac region, indicate the supervention of organic disease, or severe functional disturbance of the heart. Some suffer excessively from boils and carbuncles, from the latter of which few confirmed opium-smokers recover. Foul, indolent ulcers are extremely common among the poor; strumous affections of all kinds are apt to be developed, and the constitution is prone to succumb without resistance under all violent diseases.

"The influence of opium-smoking on the morals of its victims is not inferior to its impression on the bodily health. Indolence and inaction, neglect of business or work, and consequent poverty, though the most obvious, are not the worst results. Deeper depravity often follows in the train of these evils. Wife and children are disregarded; frequently, however, not before they are inoculated by example or positive encouragement with the same unhappy vice. Misery leads at last to crime, and crime to deeper misery. Not unfrequently theft supplies the only resources for persevering in the fatal pleasure. Of forty Chinese prisoners in the Singapore House of Correction, no fewer than thirty-five were opium-smokers. Seventeen of them, who had earned on an average eighteen shillings of wages monthly, spent nearly twenty-four shillings upon opium, the difference being necessarily made up by the gains of stealing. One of them, who earned twelve, but smoked twenty-four shillings, on being asked how this was—how it was possible? aptly replied, 'What am I here for?' The sedative action of the drug is well exemplified in the crimes for which these people were imprisoned. In Europe, where the habit of intoxication with ardent spirits adds fearfully to the contents of prisons, it is well known that crimes are committed chiefly during the excitement caused by the poison, and are therefore generally directed against the person. But the opium-smoker knows no such state of existence. His intoxication is quiescent. It is not till this stage passes off that he begins to think of crime; his object is to supply the means for the next debauch; and accordingly offences against property constitute a large proportion of the causes of imprisonment in this class of the population of Singapore. Of twenty-two opium-smokers in the prisons of Singapore and Penang, nineteen were condemned for offences against property and only three for offences against the person. Opium-smokers constitute 80 per cent. of those confined in the House of Correction at Singapore for vagrancy and police misdemeanours, but only 40, or at most 50, per cent. of those in prison for larceny, highway robbery, burglary, and other similar offences requiring boldness and enterprise.

"Unfortunately, the effects produced on the health by abandoning the habit of smoking opium, after it has become deeply rooted, are even worse than the

perseverance in it. A gloomy despondency is added to the usual symptoms of the ordinary stage of depression; a state ensues somewhat like a low state of delirium tremens, attended with extreme prostration of strength, and often with exhausting diarrhoea and vomiting; all pre-existing diseases are aggravated, dropsy frequently ensues, and death may soon result, most generally by effusion into the great cavities, and general anasarca. When these effects have begun to show themselves under a compulsory cessation of the habit, the most marked improvement of health is produced by resuming it. Hence no one who has once fairly given himself up to this unhappy vice will surrender it voluntarily. The result of the examination of several hundred opium-smokers on this point was, that, by their own confession, the extent of their indulgence was limited only by their means, and the spontaneous abandonment of it impossible. The writer of an essay on the opium trade says, 'There is no slavery on earth to name with the bondage into which opium casts its victims; there is scarcely one known instance of escape from its toils, when once they have fairly enveloped a man.' Mr. Marsden also says it is almost impossible to shake off the habit. And Sir Stamford Raffles gives it as his opinion 'that the use of opium is all the more dangerous, because a person once addicted to it can never leave it off.'

"Nevertheless, under medical advice, with due caution on the part of the physician, and some exercise of resolution on the part of the patient, the habit may sometimes be effectually and safely broken. Its abandonment, either suddenly or without due precaution, is attended with danger. But that recovery is practicable and safe under a methodical treatment, the following case will sufficiently show: A Malwah opium merchant and opium-eater had often endeavoured to abandon the habit, but always in vain. On one occasion, when wrecked on the coast of Cochin-China, his strength of mind enabled him to observe his religious dietetic principles, so as to live for weeks on dry rice and water, because he could not cook food according to his creed. But when he wished to give up his opium, this man of iron nerve was like a child for feebleness of purpose; he could not encounter the sufferings of the stage of probation. At length, on arriving at Singapore, and learning that the habit could be broken by means of a wonderful medicine, he resolved to subject himself to treatment, but on condition that he was to undergo neither the rending of the bones nor gnawing at the stomach, which he experienced in all previous attempts. At this time, he ate twenty grains of opium morning and evening. He was directed to use twice a-day a mixture containing a drachm of Battley's solution, a drachm of laudanum, and two drachms of tincture of gentian, and to wash down each dose with a mixture containing essence of ginger and two drachms of some aromatic stimulating tincture. He was likewise enjoined to take gentle walking exercise morning and evening. He felt no inconvenience, although his daily allowance was thus reduced at once from forty to about twenty-four grains; on the contrary, he felt stronger and more comfortable. The quantity of the preparations of opium was then gradually reduced, while that of the bitter and aromatic tinctures was increased; and after the opium was thus all withdrawn, the tinctures were gradually exchanged for decoctions of black pepper, ginger, and quassia. In this way, he recovered entirely without any suffering; and twelve months afterwards he continued scrupulously to abstain from the drug, and enjoyed the best of health.

"From this and other parallel cases, there is no reason to doubt that the habit may be broken off with safety by a gradual progressive reduction of the dose of opium, and the substitution of strong bitters and hot aromatics for a time, especially if with this change be combined free air, regular and increasing exercise, and a good nutritive food. But it is impossible to give up the habit at once with safety."

Prof. CHRISTISON, in a supplement to this paper, has added some interesting information to that furnished by Mr. Little.

Prof. C. says: "Important as the inquiries of Mr. Little unquestionably are, they do not absolutely settle the question of the influence produced on health and longevity by the habitual use of opium, as indulged in by inhabit-

ants of this country. The subject still requires more extended European observation.

"I am sorry to add, after this introduction, that my opportunities of adding to existing information have not been so considerable as might be desired. But I have met with one case which would undoubtedly have proved fatal in early life, had not the habit been broken; and which, on that as well as on other grounds, well deserves to be made known: and, having had some little experience in the treatment of the habit with a view to its cure, I have thought the particulars may prove both useful to the profession and encouraging to the unhappy victims of the vice; more especially as my observation does not correspond with that of Mr. Little, as to the great danger arising from its abandonment.

"The first case was that of a seaman, of the age of twenty-eight, who had contracted the habit while in the mercantile service in the Eastern seas, in consequence of being obliged to use opium for a protracted dysentery. He had continued it for two years. His daily allowance was a drachm of solid opium, which he took in divided doses in the day-time. Immediately on his return from a voyage to the islands of the East Indian seas, he applied for admission into the Edinburgh Infirmary, to be cured of the habit. He had a sallow yellowish complexion; which, however, is well known to be occasioned by the climate merely of the parts he usually visited. Farther than this, nothing remarkable could be observed in him; and he assured me that he could follow his occupation well enough, but that it cost him a great effort to do so, and that his misery was great on awaking in the morning, until he commenced his doses. The bowels were little liable to constipation; but he had been long free of the remains of his dysentery; and he had not the affection of the eyes and nose, described by Mr. Little to be generally observed among the smokers of opium at Singapore. His constitution being obviously little impaired as yet by the habit, I contented myself with simply withdrawing his allowance of opium at once and entirely, and with substituting a draught, with two drachms of tincture of hyoscyamus, in the evening, as a soporific. Great prostration of strength ensued; he either lay in bed motionless, or wandered about the ward with a languid gait and woe-begone countenance; he was affected with incessant loathing of food, nausea, and indescribable uneasiness in the stomach, but not with pain there, or in his limbs; and he slept none, notwithstanding the hyoscyamus. This state of matters continued for three days and nights, during which no change of treatment was made, except that a little brandy was given to assuage the uneasy feeling in the stomach, and that an attempt was made, but in vain, to obtain sleep by increasing the hyoscyamus to three drachms. On the fourth night he took no hyoscyamus; nature asserted her sway, and he slept soundly; in the morning, he felt revived, took some food with relish, and had no uneasiness afterwards. From that moment, he quickly recovered strength and spirits, under no other treatment than a generous diet; and, in the course of a fortnight after his admission, he left the hospital quite well. This instance may perhaps serve as an example of what may be expected when the habit, as seems often to happen under the counteracting effects of an active occupation, has not materially undermined the constitution.

"Subsequently, I was consulted in a very melancholy case, which, although its result is not known to me, is worthy of mention, on account of its remarkable circumstances. A medical gentleman in England had long been dissatisfied with his wife, on account of her neglect and indifference, so that at last a separation was contemplated. But he continued from time to time to put off the evil day. At last, he was one evening hurriedly sent for home, to find her in a state of deep sopor, and in circumstances which left no doubt that a large dose of laudanum had been swallowed. By the application of the usual remedies, she was with some difficulty roused, and eventually recovered. To the consternation of her husband, however, he then for the first time discovered that she had been long in the habit of drinking laudanum to excess, and that on this occasion she had merely taken, by some accident, a more potent dose than usual. He came to Edinburgh to consult me what was to be done, as she expressed a willingness to be cured of her fearful habit; and more particularly he was anx-

ious to know whether it might with safety be abandoned abruptly; because he despaired of accomplishing a gradual reform. The narration of the previous case determined him to adopt a similar treatment. I have never heard the result. Should these pages meet his eye, he may perhaps be induced to communicate it still.

"Some years ago, I had for a patient a gentleman who had cured himself successfully of the habit, which he had contracted while engaged in a literary undertaking of some duration, and requiring protracted fatigue of the mind. I do not know the particulars, however; but he had recovered from the vice without danger; and, when I saw him, several years had elapsed without inconvenience or relapse.

"The last case I have to mention is the most instructive that has yet occurred to me. An English gentleman, twenty-five years of age, whose pursuits rendered him somewhat migratory, consulted me, while in Edinburgh early in the spring of 1848, on account of ordinary stomach complaints. The pulse being very frequent, his body emaciated, his complexion anæmic, and his expression of countenance haggard, I suspected something more than stomach complaints in one of his age. My suspicions naturally turned to phthisis; and although they were not confirmed by a stethoscopic examination of the chest, I advised him to repair at once to his friends in the south of England, whom he intended to visit in no long time at any rate, and there to put himself under medical advice. After this, I heard no more of him till near the end of last August (1849), when I was requested by Dr. Ebenezer Skae to see him here, on account of a return of his stomach complaints, in a very urgent form. In the spring of that year, they had assailed him with increased severity. During the summer, they got progressively worse, though with occasional brief intermissions. Latterly, chronic organic disease was suspected; and, after various remedies had been used without any permanent advantage, a gentle course of mercury was recommended by one of his physicians, and had been commenced before I saw him. I found him much emaciated, and extremely prostrate. He vomited most things he took; but for three weeks had taken scarcely any food. The pulse was frequent and feeble; the tongue whitish and clammy; the bowels rather confined; the skin cool; the urine scanty, natural in colour, not coagulable by heat or nitric acid. The abdomen was very lank; and in the epigastric and both hypochondriac regions there was no fulness, firmness, tenderness, or dullness on percussion. The countenance was bloodless and sallow; the eyes clear, large, ring-eyed; the expression anxious and dreamy. There was no unusual secretion from the eyelids or nostrils. Suspecting organic disease, I recommended perseverance with mercury, and for the vomiting medicinal naphtha and hydrocyanic acid. In three days more, as he had become worse, I was sent for again; but, on my arrival, I was surprised to find him much more comfortable since the morning, and this without naphtha, hydrocyanic acid, or apparently any other remedy. Meanwhile, however, Dr. Skae had learned that a suspicion was entertained that he took opium in excess. I therefore undertook to tell him that the symptoms resembled the after-effects of opium in those accustomed to use it, and that he must put his confidence, without any reserve, in his medical attendants. He seemed a little surprised at the announcement; but all he would admit was, that he did acquire the habit three years before, in consequence of using laudanum too heedlessly for toothache; and that after nine months' indulgence, he had broken the habit, though with great difficulty, and with six weeks of constant suffering. This did not satisfy us, however; and, on finding out his druggist, and putting the question, it was discovered that for two years he had been supplied with large quantities of opium in various forms; that at one time his daily allowance was three ounces of laudanum; that latterly he had purchased at the rate of two drachms of hydrochlorate of morphia—that is, about two ounces of opium—every week; and that he had got that quantity only a few days before. The druggist having been bound down by him to secrecy, it was necessary to extort a confession, if possible, from the patient, without making use of this information. But it was all in vain. He persevered in denying that he used any preparation of opium; and nevertheless he had just contrived to obtain two additional drachms of hydrochlorate of

morphia. He was now removed to airy lodgings, two miles out of town, and from any druggist's shop; and I then intimated to him our positive knowledge of his evil habit—which, however, he began to deny again, until I stopped him abruptly with his druggist's admission. He then surrendered a paper of hydrochlorate of morphia, which he took from under his pillow; and gave his consent to anything we chose to do for the purpose of ridding him of his enemy. We proposed to withdraw the morphia at once and entirely, to administer tincture or extract of Indian hemp at night only, and to allow him every four hours half a glass of brandy, diluted with water—a beverage to which, moreover, it appeared that he was not unaccustomed. At the same time, he was placed under the vigilant observation of a sister, who had come from England to look after him.

“The vomiting, which had previously ceased for some days, owing undoubtedly to the resumption of his doses, now recurred with increased severity. For three days and nights, he had excessive retching and vomiting, and extreme muscular prostration; and on the third day frequent watery discharges from the bowels. But, from the first, the brandy relieved the irritability of the stomach for a time, and the Indian hemp was retained in the form of extract, though not in a draught. On the fourth morning, the vomiting and retching ceased. But the diarrhoea continued; neither infusion of catechu nor gallic acid made any impression on it; on the sixth day, there were ten watery evacuations; and therefore a little opium with acetate of lead was used in the way of injection. This had at once the desired effect. On the sixth day, he was able to dress, and sit up for half an hour occasionally; which he had not done for two months. Next day, he walked out for half a mile. The pulse had now fallen from 120 to 90; the tongue was moist, and tolerably clean; the appetite, which had begun to return as soon as he ceased to vomit, was good, and digestion undisturbed; he slept well; thirst was his only uneasiness, and his countenance, although still haggard, was nevertheless greatly improved in expression. Medicines were now abandoned. On the eleventh day, having still continued free alike of sickness and of diarrhoea, he set off for England, and made out the journey comfortably. Three months afterwards, I heard that he went on favourably, gaining strength, and abstaining from opium, and also from stimulating liquors, except sparingly for medicinal purposes.

“This case is probably a good illustration of the usual phenomena, when the constitution has been seriously undermined by the use of opium. It is not easy to imagine a worse case, short of the production of organic disease. The habit evidently could not have been continued much longer without imminent danger to life. Nevertheless, it was broken off abruptly, without hazard. No one can answer for such cures being permanent. An insane craving, as in the instance of the insane abuse of spirituous liquors, may lead to the habit being resumed. But, at any rate, it would appear from the instances given in this paper that the habit may be easily broken; and that there is no danger in suddenly breaking it, in so far, at least, as we see it in Europe. The knowledge of this fact may give to the physician in like circumstances a confidence and determination, which might otherwise be shaken by the symptoms of alarming exhaustion, but without which he can scarcely inspire his patient with the resolution necessary for encountering the trial which must be undergone. It is true that, in some instances, the opium may be withdrawn gradually, in the way recommended by Mr. Little; but I apprehend that, in general, as in the case of habitual excess in the use of spirituous liquors, patients may be found ready to submit to the physical evils of an abrupt abandonment of the opium, who will not undertake the moral trial of a gradual reduction.”

29. *Inunction in Scarlet Fever: with Rules for the whole Treatment, and Prophylaxis of the Disease.* Dr. SCHNEEMANN, physician at the court of his majesty the King of Hanover, has published an important paper, satisfactorily proving the benefit to be obtained from inunction of the whole surface. The eruption is so much modified that the skin is enabled to perform better its essential functions. We abridge a translation of the paper, in the *Lancet* of 15th Sept. 1849.

The advantages of the treatment about to be laid down are the annihilation of the injurious effects of the exanthem on the functions of the skin. The eruption is so modified that scarcely any desquamation takes place; and the skin, instead of burthening other functions, produces, by continuing in a state of comparative integrity, so beneficial an influence on the organs attacked, particularly the throat, that the normal condition is, in every case, and in every part, speedily restored.

Description of the Treatment. As soon as we are certain as to the nature of the illness, the patient must be rubbed, every morning and evening, over the whole body, with a piece of bacon, in such a manner that, with the exception of the face (?) and hairy scalp, a covering of fat is everywhere applied. In order to make this rubbing-in somewhat easier, it is best to take a piece of bacon of the size of the hand, choosing a part still armed with the rind, that we may have a firmer grasp. On the soft side of this piece, slits are to be made in various directions, in order to allow the oozing out of the fat; and this is still further promoted by placing the bacon, for some time previously to using it, near the stove, in the oven, or on the hub. But the fat must be allowed to cool before being used.

The rubbing must be so performed that the skin may be regularly, but not too quickly, saturated with fat. During the process, only that part being rubbed is to be uncovered, or the whole can be done under the bedclothes; but this precaution is unnecessary. Although this plan, from the mess it makes, is not calculated to find favour, as it dirties bed and linen, as well as the persons of the children, yet the first few days yield results which make all this forgotten, and inspire the mothers with enthusiasm. With rapidity, the most painful symptoms of the disease are allayed; quiet, sleep, appetite, and good humour return. Other things, however, are necessary besides infriktion with fat; but still the most important share of the merit may be imputed to this treatment. The truth of this will appear from a citation of the first results which follow:—

1. The improbability, I might say impossibility, of the patient getting cold. Were this the sole benefit of the inunction, it would be great.

2. The dry brittleness of the skin, and the tormenting itching, are not only materially alleviated, but, for the most part, fully put a stop to. Hence, children generally like the rubbing-in, and often ask for a repetition of it before the time is come.

3. The influence on the physiological functions of the skin is still more important. During the coming on of scarlet fever, the skin becomes diseased, in consequence of which it dies off; and, until a new covering is prepared for the surface, the functions of the skin are ill performed, or, during the desquamation, probably not performed at all. To appreciate the importance of the imperceptible functions of the skin, merely mechanically viewing the matter, I refer to the experiments of Seguin, which fix the quantity of matter thrown off from the outer skin at eleven grains per minute in a grown person, and therefore more than two pounds per day. What efforts it must cost the organism to lead so large a quantity into other paths, in order to throw it off when the skin is incapable of doing so! To give a striking proof of the bad influence which the interrupted functions of the skin produce on the healthy activity of relative, even of distant organs, I may cite the fact that death is always the result, where more than one-half of the skin has been destroyed by fire or boiling liquid. A similar destruction of the skin ensues in scarlet fever, with this difference, that it takes place gradually, and thereby the organism is better enabled, by employing all the activity of the body, to find aid against the mischief which, to the injury of the patient, must result from the cessation of the functions of the skin.

4. The oxidation of the blood is thus considerably promoted, the interrupting of which is the cause of such serious phenomena. As the disease of the throat is not improbably, in great part, due to the interruption of the functions of the skin and lungs, it must naturally disappear, or not present itself, where these are continued in integrity; and such is found, in practice, to be the case.

5. Owing to the fatty covering, the skin is kept moist, and the cuticle cannot

be driven about the room by currents of air; and thus *one fertile source of infection is kept closed up*, it being well known that infection is most easily communicated at the period of desquamation. The danger of infection, under any circumstances, is materially lessened with the disappearance of the eruption from the skin, inasmuch as the process of generating infectious material is interrupted by restoring the skin to its normal state.

6. By shortening the period of desquamation, and protecting the patient against the sequela of the disease, the duration of the treatment can be shortened to a period of from six to ten days.

7. The remedy is (cheap), harmless, practical, and is perhaps never counter-indicated. The linen must not be too frequently changed, as a clean shirt takes up more of the fatty matter than one already saturated, and hence the skin is sooner deprived of its fatty covering. The rubbing-in is to be kept up twice a-day for three weeks, and once a-day during the fourth. The patient is, after this, to be daily washed with cool water and soap, and then only is the warm-bath to be commenced. This process does not (as has been argued in some colleges) interfere with the natural course of the malady, and expose the individual to second and third attacks. In severe cases, the remedy may be repeated three or four times within the twenty-four hours. The main point is to keep the skin *always* cool and moist; and here, even with all possible precaution, the skin will sometimes come off in certain places. The practitioner will do well to fix the exact hours at which the rubbing-in is to take place; it will then most probably be better and more regularly performed.

Other points, which are also important enough, now remain to be noticed:—

8. *Temperature.* Experience proves that it requires no great daring to keep the patient *cold* instead of hot. Cold washing is *not* to be employed, as it promotes desquamation. Cool air seems to have a bracing influence on the system, and a soothing one on the respiration; and all danger is avoided by the fatty covering. The temperature of the bed-room should never be above 13° R. The idea of throwing back the eruption by mere cold air is an error. Great heat is much more likely than cold to throw in the eruption. In fact, the fatal cases of this kind are principally those where, through keeping the patient too hot, the cerebral affection has been brought on; this has given rise to paralysis, which appears sooner in the skin than in other parts, and thus to the withdrawal of the eruption—for the skin dies sooner than other parts, as shown in collapse, where mustard poultices do not act as in other states.

9. *Bed.* The patient should not remain in bed any longer than is absolutely necessary. As soon as the fever, headache, and a desire to remain in bed, are gone, he may quit it, for in bed the skin is between two fires,* and the functions of the body do not go on so well as in moving about. Hence, even when the patient must lie down an hour or two daily, he should still go about the rest of the time.

10. *Diet.* The diet should be light, but there must be no starvation, and as rapid a return as possible to the usual food.

11. *Washing.* Although it brings on desquamation, it will be as well to let the patient occasionally wash his hands and face with water and soap. It reconciles him to the dirt attendant on the rubbing-in.

12. If *constipation* ensue, it must only be combated with medicines; when, at the end of forty-eight hours, it makes no semblance of disappearance, then a clyster of poppy oil is the best remedy.

The author enters his protest against a partial employment of his remedies.

Complications require a Modification of the System. 1. *Severe cerebral symptoms at the commencement.* The above treatment can only be applied, where time is allowed for the development of the restorative process. Occasionally the case is accompanied at its very outset by severe cerebral affection, and convulsions. Here bleeding may be employed, and, if necessary, unhesitatingly repeated. To support this view, Dr. Schneemann instances the authority of Armstrong, Bernd, Stieglitz, Hammond, Hingeston, etc. Venesection

* Here it will be as well to state that in Germany a feather-bed is frequently substituted for bed-clothes.

is, accordingly, the sheet anchor. The other remedies are—1. The application of concentrated cold to the head; and the best form for this is ice. The cold dash is often more hurtful than useful, on account of the serious reaction which follows it, and exposes the patient more to the dangers of an apoplectic attack, although its results for the minute are often very flattering. *At the end of every two hours, the bladder of ice should be removed*, in order that the uninterrupted effect of the cold may not weaken too much the tone of the vessels of the brain. Warm mustard plasters to the shins are a most valuable remedy. Internal remedies are generally of little use where the above-given remedies fail; the only one of any importance is the carbonate of ammonia. Mercury is of little value, except just to open the bowels: for its specific action never comes into full play till the system is throwing off the affection. There are, however, much better purgatives than calomel; the saline, for instance. Emetics ought not to be tried in cases complicated with cerebral affection; in others, they may. The aconite failed in the author's hands, both in tincture and solution. With regard to the treatment by leeches and ammonia, so many writers have already pointed out its good results, that the author can safely recommend it, but with the proviso that in urgent cases bleeding be substituted for leeches.

2. *The Affection of the Throat. Primary.* As this is but a link in the whole, so must the measures taken for its removal be such as will remedy the general affection. *Secondary.* For this, the rubbing-in, as it acts by prophylaxis, is the best possible remedy; but where this has not been brought into use, or where, from keeping the patient too warm, desquamation has come on, and the secondary sore-throat has set in, the best remedy is the use of emetics. They not only remove the tough glazy slime, but excite the secretions and excretions to more normal disposition, and this is especially the case if the disorder have a gastric character. Many, by confounding the employment of emetics in the early and latter stages, have brought them into discredit. For the swelling of the tonsils, an excellent remedy is a solution of nitrate of silver (twenty grains to an ounce of water), with which they and the soft palate are to be painted; but so many varieties present themselves in these secondary attacks following on scarlet fever, that no general rules can be laid down. Here everything depends on the discrimination and judgment of the practitioner.

Prophylaxis. Warm clothing, separation from school, and, above all, light diet, are the best preventives. That the younger children, as more predisposed than the others, must be more carefully separated from the sphere of infection, is doubtful practice. Not only are many children never infected—who, however, by adopting this system, require to be as carefully secluded as the others, thus causing great inconvenience—but *the mildening influence and actual advantage of a gradual accustoming to the infection are thereby lost, and consequently the attack, when it comes, is so much the more severe.* The free communication with the patient is good, in order that constant exposure may, as in the case of physicians and nurses, blunt and wear out the disposition to the disease; for as it now is, children are separated from the patient during the first period, which is the mildest, and exposed to contact with him during the process of desquamation, which is the source of the most dangerous infection. Many preservatives have been vaunted against this malady during its epidemic appearance; of these, however, the only one apparently deserving of much credit is the belladonna. Its action appears to be, “by altering the relations of the nervous system, to diminish the disposition to the disease.” The author's prescription is—Take of extract of belladonna one to two grains; distilled water one ounce. Mix. Give to each child, morning and evening, as many drops as it has years, and continue to do so at least fourteen days. But not to confine himself to his own testimony, Dr. Schneemann gives that of Jordens, Ettmüller, Hedenus, Gumpert, Hufeland, Martius, Pormey, Behr, Benedix, Thaer, etc., who have testified to the value of belladonna; and though he admits that as many opponents might be found, he thinks it scarcely credible that all the former had deceived themselves. In certain sections of the circle of Bayeux, Dr. Feron preserved from scarlet fever all the children who had not been attacked before he commenced operations. In 400 cases near Valenciennes, treated with belladonna, not one person was attacked. Hahnemann has, how-

ever, only recommended it where the eruption is smooth, bright-red, and in large patches. But where there are roughness and purpleness of the skin, it seems to be useless; and it may be that the bad success of many cases was owing to the neglect of this distinction.

In the *Boston Med. and Surg. Journ.* (May 15th, 1850), Dr. H. Lindsly has the following paragraph: "Scarlet fever has been exceedingly fatal in this section of country during the past winter, sweeping off whole families of six, seven, and in some instances eight children; and bidding defiance to all the ordinary modes of treatment. It was under these appalling circumstances that I met with the article in the *London Lancet*, detailing Dr. S.'s mode of treatment. I at once determined to give it a thorough trial, and have accordingly employed it in every case that has since occurred in my practice, with the exception of three or four that had the disease very lightly. Some of these cases were of great severity, and just such as I had repeatedly lost under the ordinary treatment; yet they all recovered rapidly after the employment of inunction. So far as I can judge from this very limited experience, I have come to the conclusion that the introduction of this simple mode of medication will probably be found the most important improvement that has been made for many years in the management of scarlet fever."

We are inclined to concur in the hopes of Dr. Lindsly, from having seen in one case apparently very great benefit result from frequent smearing of the surface with olive oil; and from having been informed of the very great success which attended the treatment of an aged and now retired practitioner, whose habit, in many scarlet fever epidemics, had been to cover the surface of his patients with a thick, and often renewed, lather of soap, laid on with such a brush as is used in shaving.—*London Journ. Med.*, Sept. 1850.

30. *On the Use of Tannin in various Diseases.* By S. S. ALISON, M. D.—The author states that he has during the last six years been in the constant practice of prescribing tannic acid in various diseases, and his experience has led him to consider it as a most efficacious and valuable remedy.

We omit his remarks on the history and proceed to quote those on the physiological and therapeutical effects of the article and its mode of administration.

"1. As an ASTRINGENT, I have found tannic acid exceedingly efficacious, certainly as much so as any other agent, vegetable or mineral, that I have ever employed. It has equalled the salts of lead, copper, and zinc, without producing any of those poisonous effects which are liable to follow the free use of the salts of the first two metals.

"*Internal Use.* In the *chronic bronchial catarrh* of weakly and elderly persons, unconnected with disease of the heart or great blood-vessels, and attended with copious and debilitating expectoration, the administration of tannic acid by the mouth, in doses of one, two, and three grains, two or three times daily, has greatly and gradually abated the secretion, relieved the frequent cough, and improved the strength of the patient. In the second stage of *pulmonary consumption*, viz., that of softening, when bronchial catarrh has been present to a large extent, weakening the patient, causing frequent cough, and disturbing sleep, the same results have followed, and have greatly contributed to the comfort and welfare of the sufferer. But in pulmonary disease, the greatest amount of benefit has obviously been derived when large cavities have been present in the lungs, the walls of which have thrown out large quantities of purulent matter, occasionally mixed with blood. In such cases, the discharge has been effectually controlled, and the rate of tear and wear of the system obviously restrained, without the induction of oppression or other evils.

"In *chronic diarrhoea*, which had resisted the ordinary treatment by chalk, opium, and regulated diet, and was not dependent on obstructive disease of the heart or liver, tannic acid, in a solid form, has proved of surprising efficacy. In cases of severe disease, depending on an irritable weakly mucous membrane, I have not known of one failure; and of those examples connected with chronic inflammation and disorganization of the mucous membrane, only two proved beyond the influence of this remedy. These two cases occurred during the last autumn, while cholera was prevalent; and the disease of the mucous membrane

was extensive. The complaint in one of the examples was of long standing, and the patient had been addicted to habits of intemperance. But it was not tannic acid only that failed; the salts of copper, iron, lead, and zinc, in large doses, proved to be of no more avail. In this form of disease, tannic acid was administered in the form of pill, in combination with opium.

"In *leucorrhœa*, unconnected with inflammatory action, I have found tannic acid efficacious in restraining the discharge, and in increasing the strength of the patient. The aqueous solution, combined with a small proportion of dilute nitric acid, was the form usually employed in these examples of disease. In *menorrhagia*, not dependent on a plethoric state of the system, or on local congestion, it was also serviceable, administered in the same form.

"The excessive sweating in *phthisis*, and in other diseases running on to a fatal termination, has been usefully restrained by the use of tannic acid, combined with dilute nitric acid; and the habitual cold damp upon the skin of soft, weakly constitutions has been corrected by the same means. I have had no opportunity of testing the virtues of this remedy in the *hemorrhagic diathesis*; but I am strongly disposed to believe they would be found very considerable, conjoined with other suitable means. I believe it would prove serviceable in *albuminuria*, dependent on chronic disorganization of the kidney, and not associated with obstructive disease. When the egress of albumen results, as I believe it often does in no small degree, from reduced tone and elasticity in the organ, and is not (as in a great majority of cases) a wholesome outlet necessary for the relief of the circulation, tannic acid offers the promise of benefit. Such a case, however, I have not lately met with, and consequently have not had an opportunity of testing the treatment.

"*Local Application.* In the form of aqueous solution, used as a gargle, tannic acid has been most useful in correcting relaxation of the throat. Sponginess and hemorrhage of the gums have been greatly controlled by a lotion of tannic acid, and by the application of the dry powder. By this means, loose teeth may be retained for a time, and the impediment to articulation thereby prevented, which would result from their removal.

"In *prolapsus ani* I have prescribed tannic acid, dissolved in water, as an injection. This remedy is particularly indicated, when the disease is associated with great relaxation of the solids. Applied to *hemorrhoidal tumours*, free from inflammation, in the form of a fine powder, mixed with lard, it would doubtless prove more efficacious than galls, the usual remedy. It is assuredly due to the tannic acid which it contains that *uva ursi* proves serviceable in *catarrhus vesicæ*.

"In *gonorrhœa*, chronic or about to become such, tannic acid, applied externally as a lotion, has proved serviceable. In the latter mode, it has induced no smarting, although the parts have been tender, and though it has been applied with little intermission for several days. It is as a *local* astringent that tannic acid produces the most obvious effects, as Dr. Garrod has remarked.

"Of tannic acid as an astringent, I have merely further to say, that it is of special excellence, as an external application to the skin, when such a remedy is required. I have found it of extraordinary efficacy, when reduced to a fine powder, mixed with lard, and applied to the skin. The parts soon acquire a healthy aspect; very little of the smarting or pungency is experienced, which so generally results from the use of the salts of alumina, lead, zinc, or copper. I have found it far superior to gallic acid. By way of testing their comparative powers, I lately applied an ointment of gallic acid to one spot of psoriasis, and one of tannic acid to another. The strength of both was the same. The spots were of old date, and had resisted much treatment. In the course of two days, the spot to which tannic acid had been applied was all but healthy; that for which gallic acid had been similarly employed was more inflamed than before. The gallic acid had caused smarting, and brought away the protecting scales. This treatment was adopted merely to test the comparative powers of the two acids, and not as curative practice. Astringents, if they be applied in psoriasis, must be used only as subsidiary to other treatment.

"2. As a *PEPTIC* (πεπτικόν, coquo), tannic acid is very efficacious. This I soon found, while employing it as a pure astringent. Symptoms of dyspepsia dis-

appeared under its use, the appetite increased, flatus and sense of distension were abated at the same time; and, in several instances, the bowels, far from becoming constipated, acquiring a more healthy tone, actually became more free. A lady affected with phthisis, who has been under my care for three years, during which time she has taken tannic acid alternately with cod-liver oil, complained, very lately, of loss of appetite while taking the oil. The morning dose of the oil was replaced by tannic acid, combined with dilute nitric acid; and the result was a very striking restoration of the appetite. With such obvious improvement in the condition and action of the stomach, it is reasonable to believe that one of the results is the formation of a more perfect chyle. The action, as a peptic, is in accordance with the statement of one of the best writers on *Materia Medica*. Dr. Pereira says, 'Administered in moderate doses, they (astringents) promote the appetite, assist digestion,' etc.

"3. As a HISTOGENETIC, in *promoting the genesis*, and in *improving the quality of the blood*, tannic acid, it may be inferred from what has been stated above, would probably prove effective. But that it is really so, I have the evidence of improved complexion, greater fulness of the blood-vessels, increase of strength, buoyancy of spirits, and improved secretions, in numerous examples of anæmic and other diseases, in which this agent has been long employed.

"The *formation of structures in the young*, I have reason to believe, is subserved, to a valuable extent, by the long-continued administration of tannic acid, in moderate doses. It is nearly six years since I began to prescribe this remedy in cases of curvature of the bones in children, with soft shafts and enlarged epiphyses. The number of cases placed under this treatment, while I was Physician to the Northern Dispensary, was considerable; and not a few occurring in private practice were similarly treated. The general health was improved in all. The secretions, in many cases exceedingly offensive, were greatly corrected. In the course of a year or two, an obvious improvement in the shape and form of the bones was manifest. The curve was reduced; and the heads of the bones had lost no small amount of their disproportionate prominence. I have lately seen two or three children, presenting no appearance of having suffered from this affection of the bones, who, some years ago, really were deformed, and who were put under the influence of tannic acid, and also, it is true, of suitable regimen. In most of these examples of disease, when they came under my care, the urine contained an undue proportion of lime. This continued to be the case, at least for some time, even under the use of tannic acid, though perhaps not to the same extent. If tannic acid really possess the power of correcting the tendency to rickets, or of staying the progress of this affection, it cannot be through any astringent action on the kidney arresting the exit of an undue quantity of lime, which is only a sign or consequence of the disease, and not its cause. It must act by invigorating the general health, and by imparting a more healthy character to the formative processes, by virtue of which lime and other mineral ingredients in the blood are more forcibly attracted to, and fixed in, the osseous structure. Further evidence of the power of tannic acid to improve the formation of tissues has been afforded by the increase in the volume and firmness of the soft parts of children placed under its operation, which I have frequently observed.

"4. In connection with HETEROLOGOUS FORMATIONS, tannic acid has been largely employed in my practice; and as far as I can judge, and with every wish to be impartial, I believe it has been operative, to a great and valuable extent, in arresting or retarding their growth. Almost every case of incipient tubercular deposit in the lungs, which came under my care, either at the Northern Dispensary or in private practice, some years ago, was treated, at least in part, with tannic acid; and I have been agreeably surprised to find that not a few of these very patients are now alive, some apparently not nearer the grave than at that time, and some in really improved health. I was consulted in the case of a young lady, five years ago. The apex of the right lung was solidified with tubercle, and the patient had rapidly deteriorated. Sir James Clarke saw her with me, and Dr. Watson, at a later period, also visited her. Tannic acid was employed, after the more ordinary practice had been adopted; and though other means have been in use on different occasions, I attribute much of her

present health to the acid. That lady's lung is still solidified, the respiration is bronchial, and percussion is absolutely dull; but the general health is equal to that of the other members of the family, and permits of her going abroad.

"A young lady from Bow consulted me. She was considerably emaciated, had frequent cough, with much muco-purulent expectoration, occasionally mixed with blood; percussion at the left clavicle was dull; the vocal resonance was augmented; the pulse was rapid; there was much sweating; and the patient, in short, was rapidly breaking up. With counter-irritation, opium, and tannic acid combined with dilute nitric acid, very great improvement soon took place. The flesh increased in volume, the cough and expectoration greatly abated, and the respiration became easy. After this, tannic acid was made to alternate with cod-liver oil. She mended so much that, without asking my advice on the subject, she married soon after. I saw her subsequently, and found her still improving. That lady is now in fair health, and, I understand, was safely delivered of a fine child some weeks ago.

"An elderly single lady lost her brother five years ago. She was deeply afflicted, and became, immediately after this loss, the subject of tubercular deposit in the apex of the right lung. Percussion was very dull over the affected lung, and there was occasional cough; but the chief symptoms were breathlessness, sweating, and rapid pulse. Dr. Watson saw her, along with me, three or four years ago, and recommended dilute nitric acid, etc. I subsequently gave her tannic acid, and, with intermissions, she has taken it up to this time, generally in combination with nitric acid. Cod-liver oil has likewise been employed sometimes at one part of the day, while tannic acid has been given at another, and sometimes for a week, alternating with the acid. That lady is still under my care. She is very little worse than she was three years ago. The tubercles have softened, but there is no cavity. The chief alteration for the worse has been a moderate increase of the emaciation, of the cough, and of the expectoration. She is able to walk out, except in bad weather; talks with energy, has a vigorous appetite, and sleeps well. She takes, at present, tannic acid in small doses (for she has a somewhat irritable stomach), with dilute nitric acid; cod-liver oil is still occasionally employed. She has no occasion for opiates or purgatives.

"Mrs. W. had solidified lung, much tenacious muco-purulent expectoration, occasional spitting of bloody fluid, and frequent cough. Small portions of a dark brown substance, apparently separated lung-tissue, were occasionally brought up. They had an extraordinary corrupted fetor, with something of the odour of sulphuric ether or of naphtha. Counter-irritation and opiates were employed. Tannic acid, dissolved in infusion of gentian, and combined with dilute nitric acid, was administered, with the result of improving the general health, and of checking the fetid expectoration.

"The deposition of tubercular matter, it is reasonable to believe, may be retarded by the use of a remedy which improves the health both of the solids and fluids of the body. The surrounding lung-tissue may be so beneficially acted on as to reduce the tendency to inflammation and to disorganization. With respect to malignant heterologous formations, I have had no opportunity of seeing them under the influence of this remedy, except as an external temporary application; but I think it is consistent with what we see in other diseases to believe that the cells of cancer may be checked or retarded in their growth by its long-continued administration. The normal formation of nutritive processes may receive such an impulse, as effectually to interfere with the almost monopolizing growth of malignant disease. With a more healthy condition of the capillaries, and a more perfect quality of blood, may we not hope for some benefit? It may be allowed, with this view, under such desperate circumstances, to administer a remedy which, if not effectual against the major evil, will at least improve the general health; and that without the production of any ill consequence worthy to be called by a higher name than that of inconvenience.

"5. As a NERVINE of a lasting character, I have found tannic acid useful in several cases of nervous debility, languor, and excitability. These distressing conditions have been relieved; and the benefit, in one or two examples, has been permanent. Under the use of moderate doses of this medicine, I have

known even the symptoms of weakly organization—or, as I have thought, of impending softening of the brain, such as flightiness of speech and manner, impatience of attention or of application, hasty judgments, weakness and unstable gait—to lose not a little of their prominence. It has always, however, been my object to guard against depending on this or any other such remedy, where there has been good reason to suspect the presence of inflammatory action, even in a subdued form. When thus used as a nervine, tannic acid should generally be combined with camphor, hops, or hyoscyamus. The shower-bath has been employed, and the secretions have been attended to, at the same time. Thus exhibited, I believe that tannic acid, by improving the natural galvanic battery, if our brain and nerves may be so figuratively designated, will really, in many cases of feeble volition and muscular action, produce not a little of that benefit which has been sanguinely looked for from galvanism and electricity, and which, when obtained, has been so fleeting—at least in my experience.

“Mode of Administration of Tannic Acid. For administration, tannic acid is well suited. It possesses no great bitterness, is free from odour, and does not induce nausea. A little sugar or syrup will suffice to cover all unpleasantness. It is perfectly safe, and may be continued for months without any evil effect. In moderate doses, it does not reduce the secretions below the healthy standard. It may be administered at all hours,—before, or during, or after meals.

“Tannic acid may be employed alone in the treatment of disease; but it is capable of exercising its virtues harmoniously with other remedies. The use of this medicine does not preclude the employment of iron, cod-liver oil, and other such means; but, on the contrary, I believe it will make them more available to the patient. It may be given at one time of the day, and the other remedies at another; or a week or a fortnight may be given alternately to each medicine. Tannic acid, moreover, may be advantageously combined at the same moment with other means. It may be prepared with bitters and aromatics, or conjoined with astringent wines.

“For diseases of the mouth, tannic acid may be dissolved in water: three or four grains to the ounce of water make a strong styptic lotion. It may be reduced to a fine powder, and dusted over the parts. Mr. Morson has prepared a lozenge, which is well adapted for the mouth and throat. Each lozenge contains about half a grain of tannic acid. Some have had added to them essence of cayenne, the more to fit them for relaxation of the fauces and glottis. For the stomach, the aqueous solution is well adapted: and, when a pure bitter is required, some infusion, such as that of gentian, may be used instead of water. When it is intended to influence the bowels, tannic acid is suitably exhibited in the form of pill; and as circumstances indicate, in combination with opium or other remedies. If we desire it to enter the circulation, or to act quickly, at a distance from the stomach, on some internal part, the form of solution or powder should be employed. As a styptic for the rectum, uterus, vagina, or urethra, the aqueous solution, used as an injection, will generally prove most serviceable. For local skin diseases, requiring an astringent, tannic acid may be advantageously used, either as a lotion, or in the form of ointment. As, however, the application is really effective, it will be well to attend, at the same time, to any requirements that the general system may demand. Reduced to a very fine powder, I have found that tannic acid may be inhaled into the lungs and air-tubes. It has produced no irritation or cough, when tolerably well managed. I have not had much experience of it in this form; but I believe that a cautious trial might be made of it in cases of disease of the lungs and air-tubes, in which the local application of a non-irritant styptic is indicated.

“The dose of pure tannic acid must vary according to the circumstances under which it is employed. For urgent disease, such as hemorrhage from the stomach, bowels, or lungs, five to ten grains should be used every few hours. For chronic fluxes, wherever situated, two or three grains, given twice a day, will generally suffice. When the general improvement of the health is simply desiderated, one or two grains, two or three times daily, are enough; but the remedy should be long continued. For children afflicted with rickets, half a grain to one grain answers well, given night and morning.

"Tannic acid is contra-indicated in hemorrhages and fluxes, wherever situated, which are only the relieving of an obstructed circulation, or of inflammatory or congestive action. It is, under such circumstances, calculated to do mischief. In obstinate constipation of the bowels, when circumstances render a lax state necessary, tannic acid is contra-indicated in large doses, as a general rule. Irritability of stomach and gastritis are liable to be aggravated by tannic acid.

"Several preparations of tannic acid have been carefully prepared, at my suggestion, by Mr. Morson, the eminent pharmacist, of Southampton-row. These preparations are the tannates of quinine, cinchonine, alumina, bismuth, and lead. They are all coloured, possess more or less the styptic taste of tannic acid, and are inodorous. I have not yet had time to make sufficient trial of them, so as to be enabled to report at present upon their virtues. I shall now only hazard an opinion that they, as well as tannic acid itself, will be found, upon full trial, to possess very considerable power, and to form valuable acquisitions to the resources of the physician, wherewith he may render himself more formidable to disease, and still more serviceable to the sick."—*London Journ. Med.*, Jan. 1850.

SURGICAL PATHOLOGY AND THERAPEUTICS, AND PRACTICAL SURGERY.

31. *Preparations illustrative of the Mode of Origin of Aneurisms of the Aorta.*—Dr. PEACOCK exhibited to the Pathological Society of London (May 20th, 1850) three series of preparations consisting of,

1st. The upper part of the descending aorta from a man, 29 years of age, who died from the rupture of a small aneurism into the left bronchus. In this preparation are seen two sacculi, each capable of lodging a pea, of a round form, but not very distinctly circumscribed.

2. A portion of the right common iliac artery, removed from a man, 56 years of age, in whom there was an aneurism of the same vessel nearer the heart. The artery was considerably dilated, and immediately above its division there is a small shallow sac, about half an inch in diameter, bounded by a distinct margin below, but very imperfectly circumscribed above.

3. Portions of the ascending aorta of a female, 48 years of age, who died of extensive laryngeal disease. In these preparations are shown four small sacs, all very distinctly circumscribed, and separated by comparatively narrow necks from the cavity of the artery. Two of the sacs are situated on the left side of the vessel, and of these, one is five French lines in diameter at its orifice, and about the same in depth. The other, which is situated below, and somewhat to the right of the first, is altogether smaller. The third and fourth sacs are situated on the right side of the vessel, immediately below the origin of the arteria innominata, and the largest of them has a diameter, at its orifice, of seven French lines, and is about eight lines in depth.

In each of these preparations, the internal coat has been separated from the subjacent tunics, so as to show that it formed, throughout, the lining of the sacs. In the first and third series of preparations the middle and external coats, still in connection, are also preserved, to show the intimate adhesion which had existed between all the tunics around the necks of the sacs, and the thinness, or entire absence, of the middle coat at their bases. The internal coat is thus seen to have been gradually dilated and protruded through the middle tunic, so as, in the last series of specimens, to come in contact with the internal coat, leaving the bases of the sacs only protected by the internal and external tunics. These cases, therefore, afforded examples of a kind of aneurisma herniosum, though unlike the cases described under that name by Du-bois, Dupuytren, and Liston. The third series of cases afforded a good opportunity of observing the mode in which the small sacs were produced. A very copious deposit of atheromatous material had formed in the layer of fibrous tissue between the internal and middle coats, and this was most extensive in the

seats of the small expansions, where, also, it had softened into a diffuent grumous pulp, into which the internal coat, being deprived of its supports, had been gradually protruded, while the fibres of the middle coat were pushed aside or removed by absorption.—*London Med. Gaz.*, June, 1850.

32. *Treatment of Aneurism by Galvano-puncture.* By MM. PETREQUIN and GIMELLE.—It is now some years since M. Petrequin advocated the treatment of aneurism by galvano-puncture, and he has left no means untried, as far as constant publication upon the subject has been concerned, of propagating the practice. He has, however, met with but indifferent success, which is not surprising, seeing that, while the means has proved infinitely more uncertain in its results than the ligature, it requires, according to him, much tact in manipulating with the electricity, and causes the most intense suffering, which even chloroform, in some instances, has failed to prevent. It has been more frequently tried in Italy than elsewhere, chiefly in aneurisms of small vessels, and with only occasionally satisfactory results. We are not aware of its recent successful employment in London and Paris, although we understand M. Petrequin stating as much in one of his papers read before the Academy, wherein he makes no mention of the unsuccessful employment of electricity by Liston and Phillips, long before he himself had taken up the subject. Perhaps the best example hitherto published has been the successful employment of galvano-puncture in the treatment of a subclavian aneurism by M. ABEILLE, an account of which he forwarded to the Academy, upon which M. Gimelle has delivered in an able report. The patient was a lady, æt. sixty-five, and in consequence of the ill success which had hitherto attended the ligature in this description of aneurism, M. Abeille resolved on resorting to galvanism. He employed twenty-two pairs of plates, of ten centimetres in diameter, and four needles. Notwithstanding that chloroform was given, the sufferings of the patient are described as having been horrible, several persons being required to restrain the consequent convulsive movements. After thirty-seven minutes of extreme suffering, the tumour was found to have become hard, resisting, and destitute of pulsation. Moderate compression was maintained above the tumour for ten hours. It had quite disappeared in thirty-seven days, and the cure, now three years old, has held good, the radial pulse being somewhat feebler than on the sound side.

M. Gimelle, in his Report, passes in review the various cases in which galvanism has been employed, and shows that several of these were unsuccessful in even M. Petrequin's hands, while other surgeons have met with suppuration and gangrene of the sac and other accidents. So impressed is he with the numerous dangers and ill-successes of this operation, that he wished the Academy to pass an absolute condemnation upon it. This, however, was considered as too extreme, since cases in which the ligature could not be employed, or had been so usually without success, might sometimes prove amenable to this procedure. This was the view taken by M. Velpeau, who, having lost a patient from inflammation of the sac of a popliteal aneurism, for which he had employed galvanism, is naturally not prepossessed in favour of it. He believes that, in cases analogous to that now related, it should be resorted to. M. Robert took the same view, believing it should be confined to cases in which the ligature is difficult or impossible. M. Laugier, judging from a case which had occurred to himself, in which the sac of a brachial aneurism was obliterated, considers that the operation may sometimes even be advantageously employed in aneurisms of the extremities.—*Brit. and For. Med.-Chirurg. Rev.*, from *Rev. Med.*, vol. i. 1850, and *Bulletin de l'Acad.*, vol. xv.

33. *Treatment of Aneurism by Compression.*—Sir B. BRODIE, at a dinner given to him by the president and council of the Royal College of Surgeons, Dublin (29th August), in returning thanks for the honour done him, said that "It was not then the time to speak of the many improvements in scientific surgery made by some of the Irish surgeons; but he could not refrain from mentioning one of the latest. The mode of curing the formidable disease of aneurism by a bloodless operation was brought into notice by Irish surgeons, and would, he was convinced, supersede every other plan."

34. *Ulcer of Duodenum after a Burn: fatal in four and a half days by hemorrhage.*—Mr. CÆSAR HAWKINS exhibited to the Pathological Society of London (May 20th, 1850) a specimen of this description, and remarked that the influence of a severe burn upon the mucous surface of the intestines had been well known since Dupuytren first pointed out the existence of great congestion in such cases; in consequence of which observation many cases of ulcers in the duodenum had been since discovered.

Mr. Samuel Cooper had recorded two such cases about twelve years ago. Mr. Long had described some others in a paper on the general effects of burns. Mr. Curling had described six others in the *Medico-Chirurgical Transactions*, one of which had been observed at St. George's Hospital, and some cases occurring in the same hospital had been published in the *Transactions* of this Society, by Mr. Hunt. Of the connection of such ulcers with burns there could then be no doubt, though why the duodenum was especially selected in preference to the other small intestine, did not appear very plain; still less, why the upper part of the duodenum alone, close to the pylorus, was the part in which they were almost always found.

In some cases, there appeared to be no sign of the existence of these ulcers during life, but in many others they proved the immediate cause of death, producing pain in the epigastrium, and vomiting, and terminating fatally, sometimes by ulcerating into the peritoneum, sometimes by hemorrhage; in which latter case blood may be brought up by vomiting, or passed in the evacuations, or discharged in both ways; and in one case of Mr. Cooper's, blood was found between the stomach and colon, after ulceration had taken place through the peritoneum; the fatal result of these ulcers seemed to take place at very various ages, though generally in young persons, and also at very different periods after the accident. With regard to hemorrhage, it is singular that, while it occurred in six out of ten cases seen or collected by Mr. Curling, the case now before the Society is the first in which Mr. Hawkins had himself known it fatal.

The patient was a little child, six years of age, admitted after a burn of the arm, and upper part of the body and side of the face, and not affecting the duodenum. There was some collapse at first, after which the child seemed to go on pretty well for four days, but just after the expiration of the fourth day it became suddenly faint, and weak, and sinking, and died on the following morning, exactly four days and a half from the burn, having been, as far as was known, in perfect health before that time. There was no vomiting of blood, or discharge by the bowels, so that when Mr. Hawkins found it had died he was at a loss to account for the fatal collapse at this period after the accident. On looking for the existence of an ulcer in the duodenum, as he usually did, he found this part full of blood; and many other parts of the small and great intestines, down to the rectum, contained also some blood.

In the upper and back part of the duodenum, very near the pylorus, may be seen an ulcer, which appears smaller from contraction after its immersion in spirits, but which, when examined, was about an inch and a quarter long, and nearly three-quarters of an inch in breadth. It had exposed the muscular fibres at the lower part, but nearer to the pylorus it may be observed to have gone through this coat towards the pancreas, and crossing it may be seen an artery or large branch of the pancreatico-duodenalis, close to its origin, which now has a bristle within it, but could be seen by the eye as if half of the vessel had been cut off for half an inch of its course; the vessel having doubtless been the source of the sudden and fatal hemorrhage.

Mr. Hawkins remarked that he had looked through the dates of the fatal result of these ulcers, and found only one which approached to the rapidity of the present case; it was one of those recorded by Mr. Cooper, in which vomiting of blood had been noticed on the sixth day, and the child died on the seventh day; while in Mr. Hawkins' case the collapse took place just after the completion of the fourth day, and in four days and a half from the occurrence of the accident the child was dead.—*London Med. Gaz.*, June, 1850.

35. *Laryngotomy and Tracheotomy.*—The question whether the operation of laryngotomy or that of tracheotomy should be performed for the relief of as-

phyxia, resulting from obstruction of the larynx, whether that disease be acute, or consecutive to a chronic affection of the organ of voice, is of very considerable importance to the practical surgeon, and has been most satisfactorily answered in favour of laryngotomy in a very interesting paper published by Mr. P. Hewett in the *London Journal of Medicine* for February, 1849. In this communication, Mr. Hewett states that, in all cases of acute inflammation of the larynx in adults, and in those cases that occur in children from swallowing boiling water or other irritating fluids, the obstruction is seated *above* the inferior vocal chords; the mucous membrane covering them, or that below them, not being in the slightest degree thickened; and that consequently, as laryngotomy is a much simpler and safer operation than tracheotomy, it ought to be preferred in these cases.

JOHN ERICHSON, Esq., states that he has been led to a similar conclusion in favour of laryngotomy by an inquiry into this subject, on which he entered some time since, and in the course of which he examined various recent specimens of inflamed and obstructed larynx, and those preparations of disease of this organ that are preserved in several of the pathological collections in London, without being able to meet with one in which an opening in the crico-thyroid membrane would not have relieved the asphyxia equally as well as one in the trachea. This examination determined him in future to have recourse to laryngotomy rather than to tracheotomy in acute obstructions of the glottis, whether primary, or supervening in chronic ulceration or disease of the part. This determination was strengthened by the result of the post-mortem examination of two cases in which he had performed tracheotomy—the one, of old syphilitic disease of the larynx, followed by acute oedema; the other, of erysipelas of the glottis, in both of which the obstruction was found to be situated above the inferior vocal chords.

36. *Treatment of Stricture of the Urethra by Caustic.*—MR. BROWN read to the Medico-Chirurgical Society of Edinburgh a letter from the late John Walker, detailing the mode employed by the latter of treating strictures of the urethra by the application of potassa, and exhibited the instruments used for the purpose.

Prof. SYME stated that the opinions of Mr. Walker were not new to him; for, after that gentleman's retirement from practice, he had often conversed with him upon the same subject, which was so fully treated of in the letter just read by Mr. Brown. Mr. Walker was certainly a talented and enthusiastic practitioner, and was actuated by the best intentions in advocating the treatment of stricture by caustic. His principle was to apply the potassa to the sides of the stricture, and not to rest satisfied with pressing his caustic against its anterior extremity. Members might judge for themselves whether the mechanical contrivances exhibited could possibly accomplish this object. Now-a-days, when such an instrument as he held in his hand, of the full size of the healthy urethra, could be passed through a stricture, further dilatation would be hardly thought necessary. As to the cure of a very tight stricture by any such means, he believed it to be quite impossible. It was also remarkable that Mr. Walker and others, who recommended the use of caustic, reserved the nitrate of silver for the most intractable cases, and used the potassa (a far more unmanageable and destructive agent) in treating cases in which ordinary dilatation would have effected a cure. Forty years ago, Mr. Benjamin Bell collected the opinions of the most celebrated surgeons in London and in the provinces upon the subject of the treatment of stricture by caustic; and by the kindness of his grandson, Mr. Benjamin Bell, he had just been put in possession of these opinions. They consisted of letters from Mr. Pearson of London, Mr. Hey of Leeds, Mr. Park of Liverpool, and other men of note; and the arguments against Sir Everard Home's practice, which were urged by these eminent surgeons, were precisely such as were used at the present day. They detailed cases in which the practice had induced enormous mischief, by hemorrhage, fistula, hernia humeralis, and obliteration of the urethra. Although the fear of opposing the fashionable practice of the day had, forty years ago, deterred these gentlemen from publishing their opinions, there was now fortunately no occasion for such reserve; and accordingly, with Mr. Bell's permission, he proposed soon to lay before the public a part, at least, of this interesting corre-

spondence. The caustic was now condemned by the majority of the profession as dangerous. Simple dilatation by the bougie was held to be the appropriate mode of treatment for most cases; and his own opinion was that, when a case was not benefited by this plan, the division of the stricture, by cutting on a grooved instrument passed through it, would safely effect a cure. But upon one point he must particularly insist—a grooved instrument must be passed as a preliminary step in the operation. Objections had been urged against his operation, founded on the unsuccessful result of certain cases of so-called impermeable stricture, which had been treated by passing an instrument down to the seat of obstruction, and then groping for the canal behind it with the bistoury. He had found it necessary to point out the essential difference between this operation and the one which he had himself recommended; and had been asked in return, what treatment he proposed for cases of *impermeable* stricture? He had replied that he had never met with a case in which an instrument could not be passed through a stricture, and that he would be happy to pay the travelling expenses of any patients sent to the Royal Infirmary, with certificates of impermeable stricture, signed by a London hospital surgeon. He trusted that he could demonstrate, by the public treatment of such cases, that the impermeability had no real existence when tested by the careful use of bougies of sufficiently small size.

Dr. MACLAGAN had witnessed Sir Everard Home's practice in St. George's Hospital, many years ago. The use of the caustic caused an amount of suffering which it was painful to recall; it was followed by hemorrhage in a great number of cases, probably amounting to a tenth of those treated; it never effected a cure which could not be attributed to the simple dilatation of the urethra by the bougies employed; and relapses were extremely frequent in Sir Everard's practice. It was well known that the results observed in Calcutta by Dr. Hare, in the practice of certain surgeons who used the caustic, were anything but favourable.

Mr. KERR mentioned a case in which a French surgeon in Malta had inflicted such injury on a patient's urethra by the application of the caustic, that he was obliged to send him to England to be cured.—*Monthly Journal Med. Sci.*, July, 1850.

37. *On Iodine Injections in Hydrarthrosis.*—When recently dismissing two patients in whom he had successfully used iodine injections, M. VELPEAU took a general review of the present state of the question of the propriety of employing them in dropsical joints, his observations forming a sort of appendix to the celebrated Academic discussion, a few years since.

He observed that the ill success recorded by Boyer and other surgeons, as resulting from throwing injections into joints, much alarmed practitioners; the mischief which resulted, however, really depending upon the nature of the cases which were selected and the procedure adopted. M. Velpeau appealed against the abandonment of the practice on these grounds. For fifteen years he had employed iodine as an injection in hydrocele, without any dangerous inflammation being excited, so that he was encouraged to extend its application to various serous cysts; and in his "Operative Medicine," published in 1839, he suggested that it might without danger be thrown into the peritoneal cavity, an opinion afterwards confirmed by its injection into congenital hydrocele and hernial sacs. It was only in 1840, however, that he ventured to inject the knee-joint in two instances, and that by accident, the tumour in the ham communicating with the cavity of the joint. The good success of these cases, and of others in which joints were purposely injected by M. Bonnet, of Lyons, led him, however, to adopt the practice in numerous other cases. At least fifty such, treated by different surgeons, are now on record, in none of which were any alarming symptoms developed. The dangerous and fatal consequences resulted, in Boyer's cases, from the joint being widely laid open, and irritating fluids several times thrown in; while in the modern operation the smallest possible trocar is employed, and, in the majority of cases, a single injection suffices. The pain and febrile action in some cases have been considerable, requiring for their removal, in the opinion of some surgeons, leeching and abstinence; but M. Velpeau has always found them, as in the case of their

appearance in hydrocele, if let alone, gradually disappear. Their occurrence at all is, indeed, rare. In general, a little redness, pain, and swelling are observed after the injection, and are soon followed by slight fever. Increasing during three or four days, these symptoms then become stationary; afterwards to diminish, and to entirely disappear about the fifteenth day, together with a part, or sometimes all the tumefaction.

M. Velpeau now considers there is not more danger in injecting a joint than the tunica vaginalis, the chief fear being, indeed, that the operation may fail. Injection, in fact, succeeds best in proportion as the cavity more nearly approaches a simple serous one. Thus, in cysts of the neck, where the membrane containing the fluid is everywhere surrounded by soft tissues, the operation never fails. In the tunica vaginalis, where the testis places the serous membrane in a less favourable condition, failures are sometimes, though very rarely, met with; while in the joints, in which the serous membrane is free only to a limited extent, and chiefly lies on solid or very hard parts, success is more rare. Still, as the employment of injection is not preventive of other means, is not dangerous, and scarcely more painful than a blister, we should always resort to it, when a simple collection of fluid resists ordinary treatment. As, however, such collections are usually capable of being dispersed, it is an operation not often demanded, and it should not be resorted to when the collection of fluid is dependent on caries, necrosis, &c. The fears entertained by some that ankylosis might result, are unfounded, the patient recovering the use of the part as soon as the swelling has disappeared.—*Gazette des Hôpitaux*, No. 58.

The French practitioners do not seem to have taken much notice of the writings of Dr. Borelli, of Turin, upon the employment of iodine injections in various affections, although he has been one of their most active advocates. In the last paper we have seen, he reiterates his opinion of their great utility, and furnishes additional cases. These consist of examples of *hydrocele* (he states that hydrocele in boys and hydrocele of the cord in adults are always curable by simple puncture), *encysted tumours* after the evacuation of their contents, various forms of *acute and chronic abscess*, and *adenitis*. He objects to the use of resolvents, as being both tedious and useless. When matter is once formed, the abscess is rapidly cured by the injection. He relates, too, a case of *ranula* yielding to the employment of the injection, although simple puncture had repeatedly failed. Bouchacourt had, however, already published a similar case in the *Bull. de Thérap.* for 1843. After quoting a case of *fistula in ano* successfully treated by Van Camp at Angers, and relating one of his own, he states he has always hitherto failed in treating *fistulæ* in connection with diseased bone, but quotes cases from the veterinary practice of Professor Peroscino, in which the iodine was successfully used in fistula connected with diseased cartilage.

Dr. Borelli considers his practice in treating abscesses by this means as somewhat peculiar, inasmuch as he seeks to obtain union by the first or the second intention, according to the requirements of the case. The suppurative process being well determined, and the acute inflammation of surrounding parts repressed by cataplasms, after opening the abscess in its most dependent part, and evacuating the contents as far as possible, he introduces a small syringe through the aperture, and throws in pure tincture of iodine with some force, allowing it to remain in, when the pain is not too great, about half a minute. He waits three or four days to see whether the plastic effusion into the pyogenic cavity will effect its occlusion. This, however, is seldom the case, unless the abscess is very small and the engorgement of surrounding tissues slight. The injection, therefore, will require repetition every two or three days, according to the amount of reaction produced; and when this is in excess, emollient cataplasms are required. The author has never seen any ill effect, local or general, following the employment of the iodine.—*Omedei Anali*, vol. cxxviii. pp. 79-154.

The question of injecting the abdomen with iodine in *ascites* is no longer one of mere hypothesis. M. Dieulafoy resorted to it three times in the same subject, with the effect of producing a cure; and Dr. Leriche, of Lyon, has recently published two cases, in which a single injection after the complete evacuation

of the fluid sufficed. M. Boinet also has recently presented a memoir to the *Société de Chirurgie*, in which he has collected eighteen cases of ascites from various sources, wherein different substances, as gases, water, iodine, &c., have been injected. In fifteen of these, success followed, and only in one did the patient die, iodine seeming to be the especially preferable substance. M. Morel, reporting upon this paper, pronounced an almost unqualified opinion in favour of the practice; but MM. Vidal, Gosselin, Robert, and others protested against drawing any such hasty conclusions from cases the history of which had been imperfectly given, and have to be confronted with others in which a fatal termination has resulted, an example of which has recently occurred in Paris.—*Brit. and For. Med.-Chirurg. Rev.*, July, 1850, from *L'Union Médicale*, Nos. 17, 18, 19, and 60.

38. *Chloroform in Orchitis*.—As surgeon to a venereal hospital, M. Buisson has had ample opportunity of testing the value of the different modes of treating this painful disease; and he has come to the conclusion that, of all these, the local application of chloroform is by far the best, whether used in the simple, the blennorrhagic, or the rheumatic variety of the affection. It is chiefly in very painful cases that he resorts to it, after the use of leeches; but, used as soon as pain appears, it may even act as an abortive. A compress of several folds is wetted with the chloroform and accurately applied to the testis, covering this with oiled silk, and placing the whole in a suspensory. The first day, this is renewed every three hours, and continued the next day, if required. For some minutes after, it causes great heat and redness of the part, which is soon followed by a diminution of the original pain. The relief of pain is, in orchitis, the first step towards a cure of the disease; and with the proper combination of internal means this is accomplished in half the usual time, the chloroform being suspended as soon as an improvement is visible. The number of cases M. Buisson has thus treated now amount to about sixty, and he has found the remedy no less efficacious in what he calls ileo-scrotal neuralgia.—*Brit. and For. Med.-Chirurg. Rev.*, July, 1850, from *L'Union Médicale*, No. 4.

OPHTHALMOLOGY.

39. *Structure and Optical Properties of the Eye*.—VALEÉ states that he has found, by a comparison of Krauss's measurements of the dimensions of the eye, that the exterior convex surfaces have exactly that geometrical form (curved surface of the fourth order, Herschel's "Treatise on Light") which produces foci free from deviations. He calls them *optoidal* surfaces; and also finds that the posterior convex surfaces are, at least, so far optoidal as the pencils of light penetrating into the eye infringe upon them. In a subsequent memoir, Valée applies to the eye the proposition that of a series of refracting surfaces of any form, which are penetrated by rays issuing from one point, one may always be so selected that all the rays are again concentrated into one focus. He is of opinion that the cornea always receives, through the muscles of the eye, the form requisite for the production of sharply-defined images on the retina. These changes of form might be smaller, the less the form of the other refracting surfaces differs from that of the optoidal surface. (*Compt. Rend.*, xxiv. p. 676; *Ibid.*, xxv. p. 501; and *Liebig's Report*, vol. i. p. 166.)

Dispersion of the Human Eye.—Matheissen is of opinion that the means for effecting the achromatism of optical impressions are arranged by nature external to the real optical apparatus of the eye. This opinion is contradicted by Valée, who states that the strong converging pencils of light emergent from the crystalline lens are brought to a point (*appareil acuteur*) by the vitreous humour, which he considers is composed of layers of different density, and that the rays of different colours are thus brought into one line. (*Compt. Rend.*, xxii. pp. 875 and 1096.) Pappenheim has measured the ratios of refraction of the vitreous humour in the anterior and posterior layer. He has found the former to be 1.3339 and 1.3343, the latter 1.3371, differences which are, at all events, too slight to justify Valée's *appareil acuteur*. (*Compt. Rend.*, xxv. p. 901. *Liebig's Report*, vol. i. p. 166.)

Defects of Vision.—Hamilton gives an account of a peculiar defect of vision. A man, twenty-five years of age, who was short-sighted, and partially blind at night, was able to recognize horizontal lines tolerably well, but could scarcely distinguish vertical ones, and was much less able to delineate them. An experiment, made with a card pierced with two holes, through which the head of a pin was observed, showed that the latter was seen by the left eye at a distance of six or nine inches, according to whether the holes were taken horizontally or vertically; with the right eye the ratio of five and a half to six and a half was observed. The defect was remedied by a cylindrical lens. (*Froriep's Notizen* [3], vii. p. 219; and *Report*, p. 167.)

Muscae Volitantes.—Brewster has founded, on experiments with his own eye, a view respecting the *muscae volitantes*, which differs from the explanations given by De la Hire, Porterfield, and Mackenzie. He points out as the cause, portions of the cells in which the vitreous humour is inclosed, of which the torn filaments float about in the chamber, and throw shadow and reflected light on the retina. By means of two bright lights placed before the eye, two shadows of the same fibre were obtained, by the aid of which Brewster has measured the apparent diameter of the *muscae volitantes*, as well as the distance from the retina of the bodies producing it. According to Brewster, the *muscae* occur in every healthy eye, becoming dangerous only by too great an accumulation; they are, therefore, by no means a symptom of approaching blindness from cataract or amaurosis.—*Phil. Mag.* [3], xxxii. p. 1. *Liebig and Kopp's Report of the Progress of Chemistry*, vol. i. p. 167.

40. *Black Cataract.* By M. PETREQUIN.—The occasional existence of black cataract (*cataracte noire*) has not been referred to by several distinguished writers on Ophthalmology, many of them having never seen it. Others, as Freytag, Gendron, Montain, etc., refer to it without having witnessed it. Janin, of Lyons, relates three cases, occurring in his own practice. In a woman, seventy years of age, he removed a large black crystalline lens, of hard consistence, enclosed in its capsule; and which, when viewed through a light, appeared of a brown red colour. In another case, in the year 1767, he extracted from each eye a crystalline lens possessing similar characters. (*Mém. sur l'Œil*, 1772, pp. 259 and 261.) Wenzel and Pellier, Marc-Antoine Petit, Coze, Cloquet, Riberi, and others, have also met with cases.

The existence of black cataract being established, other questions arise for investigation. Dupuytren correctly remarks, "The greatest difficulty, in cases where the existence of black cataract may be presumed, is presented by the diagnosis. If the lens be totally black, it is difficult to determine whether there be cataract or not." (*Lec. Clin. Chirurg.*, t. i. p. 49.) The extreme rarity of the disease prevents us from completely observing its progress; and this is easily understood, when we reflect that Demours, Scarpa, Delpech, and Dupuytren never met with it in their extended practice, and that not one case is recorded in the *Annales d'Oculistique*. For the complete demonstration of the disease, we require careful observations of such a nature as to furnish a rigorously exact diagnosis. We require such an examination of the affection, in harmony with the modern progress of ophthalmoscopy, as will satisfy the requirements of science, and leave no important desiderata. In proportion to the rarity of our opportunities of verifying theory by practice, they ought to be eagerly seized; and this is what I have borne in mind in observing the three cases which have come under my notice within the last twelve years, in the Hôtel Dieu at Lyons. The research is not an idle one, for it is capable of important application. An error in diagnosis may lead to most mischievous results. For instance, if an amaurosis be mistaken for black cataract, as happened to Dupuytren, a useless and even dangerous operation may be performed, which may destroy all chance of restoring the function of the eye. If, on the contrary, a black cataract be mistaken for amaurosis, not only is time lost in superfluous treatment, but the patient is subjected to unnecessary suffering from blisters, purgatives, the cautery, and setons, while a simple operation might cure him. These considerations must give additional importance to the cases, which will be now related.

CASE I. *Black Capsulo-Lenticular Cataract; Diagnosis; Extraction; Examination of the Lens.* M. B., of Chapelle (Saône-et-Loire), was admitted into the Hôtel-Dieu at Lyons, under my care, on the 24th September, 1847. His sight had been weak for several years, without any known cause. He never had headache, but sometimes had a sensation as of gravel in his eyes. The left eye began to be affected twelve or thirteen years before, and for the last six years the blindness had been stationary. The patient was not only unable to see her way, but could very imperfectly distinguish the presence of light. She had a black capsulo-lenticular cataract; the interior of the eye did not exhibit the brilliant reflection which is usually observed in viewing it through the pupil; the pupillary aperture, instead of presenting a brilliant velvety dark appearance, was of a dirty obscure black, not reflecting light. The patient's intellect was much impaired, so that we could not ascertain whether she saw better in the morning or evening than in the middle of the day, nor what colours objects presented at these times. The appearance and motions of the eye denoted cataract. The pupil was regular and mobile, which is not the case in amaurosis. The cataract was not of an inky blackness; but, when viewed through a lens, it appeared as a dark opaque body covered with soot, or rather as if it had been macerated in a solution of soot. In addition, a pretty large opaque triangular segment of the capsule, with its apex towards the centre of the pupil, was observed to be covered with blackish striæ, distinctly raised, when viewed in profile, from the rest of the cataract. When examined from the side, these striæ were found to be too near the cornea to allow of the supposition of their being situated in the vitreous body, or, *à fortiori*, in the retina. On viewing it in profile, a convexity was observed; but the shadow of the iris was not thrown on it, as is asserted by some observers. On holding a candle before the eye, only the first of the three images was produced. On the 30th September, I performed extraction by making an oblique incision to the exterior of the cornea, and through five-sixths of the semi-circumference of that membrane. The cataract being very large, I extended the opening with small scissors. I adopted the proceeding of Wenzel by making an incision in the lens before finishing the section of the cornea. The lens did not escape spontaneously, nor when careful pressure was made on the eyeball. But I easily extracted it with a Dupuytren's needle. There was no prolapse of the iris, nor escape of the vitreous humour; and the operation was perfectly successful.

The cataract was black, of a dull hue, voluminous, hard, and enveloped in an equally opaque and blackish capsule, as if the whole crystalline system had been immersed in a dilute solution of Indian-ink. I preserved the specimen in alcohol; and, at the present time, after it has remained two years in the liquid, the blackness has given place to a reddish-brown; the cataract is shrivelled, and has become less voluminous and less opaque than at the beginning.

CASE II. *Black Cataract of Lens; Diagnosis.*—A woman, named B., had black cataract of the right eye; but the capsule did not appear affected. The disease was not of such long standing as in the former case, and the brown tint was more uniform. The usual lively dark colour could not be distinguished at the bottom of the eye. The pupil was regular and mobile, the look natural, and not dull as in amaurosis. A convexity could be recognized, which, when viewed in profile, assumed a less deep and more gray colour, without presenting any opaque point on the lens, either to the naked eye or to a lens. The black opacity was more homogeneous than in the left eye, and the loss of sight was more advanced. The patient could distinguish the day and the shades of light. A candle held before the eye gave two images. An operation was performed, at the earnest request of the patient; but she produced staphyloma by constantly applying her fingers to her eyes. This was somewhat relieved by remedies. From her irritating the eye, however, inflammation resulted, which produced deformity of the iris and opacity of a portion of the cornea. She sank into a state of senile idiocy, and left the hospital, on the 25th October, with little or no benefit.

CASE III. *Double Cataract—black in the left eye, gray in the right.* J. T., aged sixty, native of Ailloz, in Savoy, was admitted, under my care, into the Hôtel Dieu, at Lyons, for double cataract. In the right eye, the cataract was

lenticular, grayish, with an amber-coloured softish and large nucleus. It had existed for six months, and the sight was more affected than on the left side, where the eye had been diseased for eight years. In the left eye, the cataract was black, but not so perfectly but that some difference of shade could be discovered on viewing it attentively through a lens. The centre was of a deeper shade than the circumference. The pupil was movable and regular, and the appearance of the eye in other respects was natural. The opacity was not very deep, and appeared, when viewed in profile, to be situated at the level of the pupil. On careful examination from the side, some convexity could be observed; but the shadow of the iris was not thrown on it. The cataract was of a dull black tint, like chimney soot; it was mostly homogeneous, but a few isolated points towards the centre appeared more opaque, which made me suppose that the lens was affected in that situation. On viewing it in profile, it assumed a more reddish and even grayish shade. The experiment with a lighted candle gave two images, of which the second was very confused, and disappeared in several places. My diagnosis was thus confirmed. A great number of medical men agreed with me that there could be no doubt of the existence of black cataract. It was remarkable that vision was less affected in this eye than in the right, for with this one the patient could see to guide himself, and could distinguish the shapes and colours of objects. He even asserted that vision had been improving in this eye for four or five months, and that it was less affected than in the early period of the disease. He also saw better on some days, and at certain times of the day, but could give no precise information on that subject. The cataract appeared hard, but less voluminous than that described in Case I.

Remarks. After describing the catoptric test, first proposed by Purkinje, in 1823, and revised by Sanson, in 1837, and showing its importance in the diagnosis of cataract from amaurosis, M. Pétrequin makes the following observations:—

The experiment was performed on our patient (Case III.) several times, in the presence of several physicians and pupils; and a comparative examination was made of several diseases of the eye. I have referred to a remarkable fact, and one which gives rise to an interesting question. The patient imagined that his vision had improved in the eye which was affected with black cataract. To explain this, it may be supposed that when the right eye was scarcely affected, its comparatively sound state caused the vision in the left eye to appear more impaired; and that latterly, when the left eye became in its turn the seat of a confirmed gray cataract, the right appeared, though there was no actual difference, to have improved in power of vision, there being not an *absolute* improvement, but merely a *relative* one, such as is often the result of erroneous comparisons.

I have also been enabled to distinguish the degree of opacity as well as the colour of a cataract. Blackness is not sufficient to entirely prevent the perception of light. Thus, I observed that vision was not entirely destroyed in two of my patients; the woman operated on by Janin in 1767 perceived objects, and distinguished the flame of a candle as an object of a deep red colour; while the patient of M. Coze, operated on in 1818, could see to walk about the roads with which she was acquainted, especially in the morning and evening. In fact, a black cataract acts simply as a blackened lens, being almost analogous to the smoked pieces of glass used for viewing the sun. These do not altogether intercept the luminous rays, but only absorb those which are too intense. The use of coloured glasses is constantly ordered to patients, in order to attenuate the intensity of the light. Their use is too general to render it necessary for me to insist further on the analogy.

The black colour of the cataract is not sufficient to explain the partial blindness which accompanies it. We must take into account the opacity of the lens. This seems to be less than in some cases of cataract; and attentive observation has proved to me that some lenticular cataracts, as they advance, become harder, and are rendered sensibly less opaque by the thickening of their constituent parts. This phenomenon cannot have escaped notice; and it is possible that it was one of the causes which contributed in Case III. to the amelioration of sight. It can also be understood that the lens in becoming

hard will become smaller, and that the diminution in volume will permit more light to pass to the interior of the eye, either through the lens or its circumference. This phenomenon was apparent in Case III. By the aid of a lens, it was easy to recognize, while the pupil was dilated, that the black crystalline lens did not entirely fill the field of vision; but that there was a crescent-shaped free space at the lower part, through which, notwithstanding its narrowness, a sufficient number of rays of light penetrated to become, by habit, adequate for vision. This may be proved by a very simple experiment. If a black bandage be placed over the eye, and a small fissure be left in it, a small quantity of light will be admitted, which will at length become sufficient for vision.

Many hypotheses have been framed to account for the colour. Rosenmüller thinks it due to melanosis; but M. Carron du Villards, who has examined a great number of horses labouring under this affection, has never found the crystalline lens black. M. Sichel refers this deep colouring of the crystalline to the different degrees of aggregation of its particles, and to the consistence of the cataract. But then the lens ought to become blacker as it becomes harder. This is not the case, for the contrary often occurs. M. Langenbeck, Jr., attributes it to the presence of manganese, which has been found in lenticular cataracts. M. Pétrequin is disposed to agree with M. Carron du Villards, that the colour is due to the predominance of black pigment, which penetrates into the lens by imbibition or endosmose, as is observed in the yellow tinge of icteric patients, and in the redness, from sanguineous exhalation or stasis, of asphyxiated children. It is very important to distinguish true black cataract from those brownish, striated, partial tints, which are called *choroidal* or *pigmentary cataracts*. This has been pointed out by M. Cartoni, of Pisa, in the notes added to his Italian edition of Richter's *Surgery*.—*Lond. Journ. Med.*, Aug. 1850, from *Revue Médicale*, Feb. 1850.

MIDWIFERY.

41. *Duration of Pregnancy in the Human Female*.—Dr. JAMES REID, Physician to the General Lying-in Hospital, in an interesting article (*Lancet*, July 20, 1850) has furnished some facts calculated to decide this disputed question. He gives a summary of twenty-five cases which he has collected during the last twenty years. He says that he has every reason for relying implicitly on the statements made to him by the parties. They were either cases of single women who dated from one coïtus, or of married females whose husbands had been absent for a considerable time before and after the last intercourse. In no one of them was there the slightest apparent reason for deception, and their small number in so long a space of time will evince that I have been careful to select such only as I could thoroughly depend on.

Cases dating from single Coïtus.

1. Connection only July 27; parturition occurred April 30 (276 days).
2. Catamenia terminated March 14; connection only March 18 and 20; parturition, December 20 (274 days).
3. Catamenia December 13; connection immediately after; quickened April 6; confined September 13 (274 days).
4. Catamenia November 6; connection only November 18; confined August 20 (275 days).
5. Catamenia, November 7; connection only November 12; sickness commenced on December 12; confined August 12 (273 days).
6. Catamenia January 10; connection only February 2; quickened June 16; confined October 31 (271 days).
7. Connection only November 15; confined August 16 (274 days).
8. Connection only October 18; confined July 19 (274 days).
9. Catamenia June 15; connection only July 1; confined April 5 (278 days).
10. Connection only August 5; confined April 25 (263 days).
11. Catamenia August 4; connection only August 6; no intercourse afterwards for six weeks; confined May 13 (280 days).

12. Catamenia August 9; connection only August 11; confined May 2 (264 days).
13. Connection only October 29; confined July 30 (274 days).
14. Catamenia November 7; connection only November 18; confined August 21 (276 days).
15. Connection only October 8; confined July 9 (274 days).
16. Connection only April 6; confined January 7 (276 days).
17. Catamenia August 15; connection only August 18; confined May 25 (280 days).
18. Catamenia July 17; connection only July 22; quickened, November 10; confined April 15 (266 days).
19. Catamenia January 9; connection only January 10; confined October 2 (265 days).
20. Connection only February 11; confined November 3 (266 days).
21. Catamenia May 14; connection only May 14; quickened September 10; confined February 10 (272 days).
22. Connection only February 28; quickened at nineteenth week; confined November 30 (275 days).
23. Connection only February 9; confined November 6 (271 days).
24. Catamenia March 5; connection only March 12; sickness commenced April 14; quickened July 6; confined December 24 (287 days).
25. Catamenia September 10; connection September 15, 16, 17; confined July 5 (292 or 293 days).

Two only of these cases, it will be observed, went beyond the term of 280 days, and it is requisite that I should enter more fully into the details relating to them.

In case 24, the circumstances were as follows: A young lady, under promise of marriage, unfortunately allowed liberties which caused the usual result—pregnancy. She was then deserted by her lover, who went into the country, and she saw no more of him for a time. About eighteen months after her confinement, an imprudent female friend wrote to her, informing her that the father of her child was in London, and was to be at her house on the ensuing evening, but that he was to leave town on the day after. Hoping that she should be able to induce him to aid towards the maintenance of the child, she went to her friend's house at the appointed time, March 12th, and the parties, having been left alone together for a time, intercourse again took place. The catamenial period had terminated a week previously, and at the expected time of its return she was alarmed at its absence. Morning sickness commenced on April 14th, and in the beginning of June, when she called to consult me, they were all the well marked signs of pregnancy. The movements of the fœtus were felt on July 6th, and from there being no doubt whatever, in this case, as to the precise time of conception, I felt much interest in watching the termination. December 17th was the day on which it was calculated, at the latest, that parturition would take place; but this event did not occur until the twenty-fourth, making the term of 287 days. The parties had never met after the 12th of March.

CASE 25.—A married lady who had not borne a child for the previous five years. Her husband returned from the Continent on the evening of Sept. 15th (five days after the lady's catamenial period), and he left again for a long journey on the morning of the 17th. All the usual signs of pregnancy occurred in October, and throughout the whole term she confidently expected to be confined about June 21st, as the date of impregnation was so well marked. Labour, however, did not commence until July 5th.

Now in this case one objection only could be offered as to the veracity of the data, but independently of the virtuous character of the lady, my attention would not, under other circumstances, have been so frequently directed to the precise date of her husband's departure, and after five unproductive years, it would at least be an extraordinary coincidence that impregnation should have been caused by another individual than the husband at this precise time. I may add, too, that of several children which the lady now has, that which was born at the period referred to certainly bears a much stronger resemblance to the husband than either of the others.

The following are cases narrated by other authors, in which the data were sufficiently determined:—

Dr. Girdwood's—The husband arrived at home on May 31; the catamenia ought to have appeared on June 2, but did not; symptoms of pregnancy soon after were evident, and parturition took place on March 1 (274 days).—*The Lancet*, Dec. 1844.

Dr. Montgomery's—Catamenia October 18; impregnated Nov. 10, one connection; quickened January 28; confined August 17 (280 days).—*Exposition of the Signs and Symptoms of Pregnancy*.

Dr. Rigby's—Three cases of single coitus; first, 260 days; second, 264 days; third, 276 days.—March, 1846.

Dr. Lockwood's—Four cases of single coitus; first, 270 days; second, 272 days; third, 276 days; fourth, 284 days.—*American Journal*, Dec. 1847.

Single connection October 10, 1840; confined August 4, 1841 (272 days).—*American Journal of Medical Sciences*, April 1842.

Case of Anderson v. Whitaker, 1827. One coitus only on Jan. 8; confined Oct. 28 (283 days).

Dr. Lee—Forty one weeks after the departure of the husband for the East Indies (287 days).—*Medical Gazette*, 1831.

Desormeaux's is a very satisfactory case. The lady was deranged, and it was thought probable by her physicians that pregnancy might be beneficial. The husband visited her, therefore, at intervals of three months only, so that, if conception should take place, the risk of abortion from continued intercourse might be avoided. An exact account of these visits was kept, and when conception took place, they ceased. She was confined nine calendar months and a fortnight after the last visit. The exact number of days is not given, but, taking the shortest nine months (273 days), with the addition of the fourteen, there will be at least 287 days.—*Dict. de Méd.*, vol. x.

Dr. Dewees' case in Philadelphia; one connection; delivered nine months and 13 days after (say 286 days). In this case, the catamenia appeared as usual at the proper period, one week after the intercourse.

Dr. Beatty—291 days.—*Dublin Medical Journal*, vol. viii.

Mr. Skey's case of Cæsarian operation. One coitus took place only on April 7, 1846; labour pains commenced on Jan. 25, 1847 (293 days).

Dr. M'Ilvain's case at Charlotte, North Carolina.—Mrs. S., a lady, was visited by her husband from a distance, on July 1, 1847; he remained until the morning of the 6th, and did not again see his wife for nine months. Intercourse took place on the 1st, 2d, 3d, and 4th of July. Shortly after, symptoms of pregnancy appeared, but the lady was not confined until April 23, 1848, 293 days after the 4th of July (or perhaps 296 after the 1st).

Dr. Ashwell's—Catamenia terminated on Jan. 25; husband left a few days after, and was absent six weeks. Confined November 27 (300 days after the last intercourse). There would be 258 days from his return; but the infant, Dr. Ashwell mentions, was much larger than the other children of the lady, and bore a strong resemblance to the father.

Velpeau gives a case (*Art. des Accouch.*) of 310 days. At the supposed fourth month of this gestation, M. Velpeau affirms that he distinctly felt both the active and passive movements of the foetus.

It will be seen, therefore, by the foregoing cases, that there are well authenticated instances in which the period of gestation has been extended beyond the usual term. In the cases of *single intercourse*, 293 days form the longest period or eighteen days beyond what I have deemed to be the usual average duration of pregnancy in the human female. Now it is a coincidence with the results of Lord Spencer's tables, that of the 764 cows, whose data were so accurately noted, the greatest excess beyond the average term of gestation in them (285 days) was also eighteen days. In the case related by Dr. Ashwell, the exact day of impregnation is not given; it is stated that the husband left a few days after the catamenial period, and I have put this down as six days after, but as it is the only case which extends to 300 days, some perhaps may doubt the exactness of the husband's statement as to time.

Velpeau's case is without dates and rests solely on the fact of the foetal movements being felt at the fourth month; might they not have been appreciable before that period?

With a view to ascertain the experience of those who were most likely to have paid particular attention to this subject, I applied to upwards of forty of our

most eminent obstetric practitioners in London, Dublin, and Edinburgh, and I have here to acknowledge the great kindness with which they have responded to my application.

The large majority express a firm conviction as to the occasional extension of the usual period by a few days beyond 280.

Several like myself have met with one or two only of protracted gestation, out of many hundred cases, on the exact data of which they could rely.

Others, who had not kept notes of their cases, could not positively speak to facts, but had no moral doubt as to the period being extended, in some instances.

Some who have had extensive experience in private and hospital practice, state that they have never met with an undoubted case of protracted gestation; whilst two affirm that it is their strong conviction that no case ever exceeds the 280th from conception; and one, that it is never carried beyond the ninth calendar month.

After fully considering the evidence we possess, as to the duration of pregnancy when calculated from a single coitus, the only positive data as to its commencement, Dr. Reid, as much reliance has been placed on other data, shows that they are not to be depended on. He gives also the following table, the result of 500 cases in which the exact number of days intervening between the last day of menstruation and that of parturition is shown. With the exception of about fifty, they were private cases, in which the data were most correctly kept; and the others were selected from upwards of 1000 hospital and dispensary cases, presenting an equal certainty as to date, in females superior to the usual class of hospital patients.

	Days.	Cases.		Days.	Cases.
37th week.	252	4	42d week.	288	17
	253	1		289	8
	254	3		290	9
	255	1		291	14
	256	2		292	6
	257	4		293	3
	258	4	43d week.	294	6
38th week.	259	4		295	2
	260	6		296	5
	261	5		297	8
	262	3		298	6
	263	9		299	1
	264	10		300	2
39th week.	265	5	44th week.	301	4
	266	10		302	1
	267	9		303	1
	268	13		304	2
	269	5		305	1
	270	13		306	0
	271	12	45th week.	307	1
40th week.	272	13		308	2
	273	16		309	0
	274	21		310	1
	275	20		311	1
	276	16		314	1
	277	16		315	2
41st week.	278	22		316	1
	279	21			
	280	15	Total, 500 cases.		
	281	18			
	282	25			
	283	14			
	284	15			
	285	14			
	286	15			
	287	11			

In the case which occurred 314 days after the cessation of the catamenia, I find it noted that quickening did not happen until the sixth month—proving, in my opinion, that conception had taken place later than had been thought. Had minute investigation been made, at an early period, into the remaining five cases, which went beyond the forty-fourth week, it is most likely that similar facts might have been observed.

It will be seen that the above table agrees with that of Dr. Merriman (114 cases) in showing that the greatest proportion of women complete the period of gestation in the fortieth week after the cessation of the catamenia, and a very considerable number in the forty-first week.

In Dr. Murphy's table of 182 cases, the numbers born in the thirty-ninth and fortieth weeks were about equal, being twenty-four and twenty-five, whilst the greatest proportion (thirty-two) were in the forty-first week, and twenty-five in the forty-second week—equal to those in the fortieth.

In my own tables, the 282d day was that on which the largest actual proportion of the patients were delivered; but the number from the 274th to the 282d day run so near to each other that we must rather take that as the average period. If we allow of a range of from two to six days after menstruation, as elapsing probably before conception takes place, it will then appear that about the thirty-ninth week after impregnation is more probably the ordinary duration of pregnancy; and this will coincide with the results of the table taken from cases of single coitus.

42. *Mucous Membrane expelled from the Uterus during Menstruation.*—M. LEBERT described to the Biological Society of Paris (April 1850) a membranous sac, of the shape and size of the cavity of the uterus, expelled during a paroxysm of painful menstruation. This substance measured four centimetres (≈ 1.74 Eng. inch) in length, and from two and a half to one centimetre ($\approx .983$ — $.393$ Eng. inch) in breadth, and about one centimetre ($\approx .323$ Eng. inch) in thickness. It presented three apertures corresponding with the os uteri and orifices of the tubes. Internally, its surface was lined with pavement epithelium, the cells of which were from an eightieth to a ninetieth of a millimetre in diameter, enclosing an ovoid nucleus, and these again containing nucleoli.

M. Lebert considered that this pathological specimen lent confirmation to the opinion of those physiologists who consider that menstruation is normally attended with the formation and expulsion of a false membrane, analogous to the decidua of pregnancy.—*London Med. Gaz.*, Aug. 1850.

43. *Menstruation in Relation to Pregnancy.* By Prof. DUBOIS.—Conception may take place in a woman not yet arrived at the age at which she ought to menstruate. There are, in fact, many women who do not menstruate till the seventeenth, eighteenth, or nineteenth year. Such women may become pregnant at that time of life, although they have never menstruated. M. Dubois has seen a woman become pregnant two years after the cessation of the menses. The woman, finding her abdomen enlarging, entered the medical department of a hospital. The physician under whose charge she was had so little idea of the woman's being pregnant, that he delivered a clinical lecture on the case, as one of ovarian dropsy. On making an examination of the case, M. Dubois easily made out the pulsation of the foetal heart. In fact, labour very soon supervened.

The menses may be suppressed physiologically, and yet pregnancy take place. Thus, it is not rare to see nurses become pregnant before menstruation has reappeared. We find, also, that women who are extremely irregular, who, for example, menstruate only once or twice a year, become pregnant: although, in general, this state is one very unfavourable for conception.

Various diseases and changes in habits may derange the menstruation, and give rise to the idea of pregnancy. This error occurs frequently, chiefly to persons anxious to become in the family way. Nothing is more common than to find the menses suppressed for some time after marriage. It is also very frequently observed that women leaving the country to reside in the town suffer from suppression. This may be said to occur habitually in young women coming from the country into domestic service in Paris.

In other cases, the menses, after having been suppressed for three or four months, reappear suddenly, with some profuseness. This is sometimes taken for the occurrence of abortion, when it is merely the recurrence of the menses after they have been suppressed, in consequence of some change in the habits of the female.—*Monthly Journ.*, July, 1850, from *Journal de Méd. et de Chirurg.*, May, 1850.

44. *Spurious Pregnancy—its frequency and nature.*—Dr. SIMPSON, in a communication read to the Edinburgh Obstetrical Society, showed how frequent and marked the phenomena of spurious pregnancy were among domestic animals, as in the bitch, cow, &c. In these animals, the phenomena of pregnancy often occurred both subsequently to unsuccessful sexual intercourse, and also frequently after seasons of heat, but during which there was no intercourse with the male. Occasionally the phenomena of pregnancy in them were suddenly interrupted, and terminated a short time after their commencement; sometimes, however, they went on increasing to the full term of pregnancy, and ended in a series of puerperal phenomena, as the presence of milk in the mammæ, &c. &c. Dr. Simpson adduced a variety of facts, showing the great frequency with which the same phenomena of spurious pregnancy occur in the human female in a more or less marked degree, and how these phenomena are often mistaken for dyspepsia, hysteria, and various anomalous and perplexing ailments. And as these phenomena sometimes occur in the virgin state among the lower animals, so do we find them also sometimes occurring in the unmarried human female, and giving rise to symptoms that have hitherto defied any nosological arrangement. Lastly, he spoke of the great use of aperients combined with tonics, and with nuxvomica and galbanum in the subjugation of the phenomena of spurious pregnancy.—*Monthly Journ. Med. Sci.*, July, 1850.

45. *Spurious Pregnancy followed by Spurious Parturition.*—Dr. KEILLER communicated to the Edinburgh Obstetrical Society the particulars of a case in which the symptoms of spurious pregnancy, and subsequently those of spurious parturition, existed to such a remarkable degree as to induce the patient and her friends not only to prepare for the expected accouchement, but, when the supposed full time arrived, to believe in the actual commencement and continuance of a very painful labour, which ultimately became so protracted as to demand, according to the opinion of the attending accoucheur, the immediate and unavoidable performance of the *Cæsarian section*!

Dr. K., having been requested to visit the case for the purpose of satisfying the friends of the patient as to the propriety of having recourse to such an extreme mode of accomplishing the delivery as that which had been seriously proposed to them by the individual in attendance, was astonished to find, on making an examination, without any misgivings as to the parturient condition of the patient, that all the supposed symptoms of pregnancy and of parturition had been, and were still, *entirely spurious*, the uterus being evidently unimpregnated!

This startling opinion was anything but credited at the time by the females present, who altogether ridiculed the idea of the case not being one of “*real labour*,” as the motions of the child had long been not only distinctly felt, but even seen “through the walls of the much distended abdomen,” the patient herself insisting that the child’s movements were so violent that she felt “as if it would leap through her side!”

The result of the case, however, sufficiently proved that her painful attempts at delivery could not possibly have been rendered less futile by the *Cæsarian section*, or any other *obstetrical* aid, as *pregnancy never had existed*!

The patient remained for a considerable time afterwards under the immediate care of Dr. Keiller, who stated that he considered the entire group of anomalous symptoms (which she presented in a very singular degree, and which he purposes recording) in a great measure referable to hysteria.—*Monthly Journ. Med. Sci.*, July, 1850.

46. *Cold as an Excitement of Fœtal Movements.*—Dr. SIMPSON stated to the Edin-

burgh Obstetrical Society a variety of observations and experiments showing that, contrary to the common opinion, the mere application of cold (as a cold hand, &c.) to the surface of the abdomen of a pregnant women, had not the effect of exciting motions in the foetus. The application of portions of ice, even of the size of the hand, had no such property.—*Monthly Journ. Med. Sci.*, July, 1850.

47. *Hemp as an Oxytocic*.—Dr. SIMPSON stated to the Edinburgh Obstetrical Society that, in the early part of the winter session, he had given Indian hemp (*Cannabis Indica*) in several cases of tedious labour, with the view of ascertaining if it possessed any oxytocic effect (like ergot of rye) in increasing and exciting the parturient action of the uterus. He had been induced to try the effects, if any, of Indian hemp during labour, in consequence of Dr. Churchill stating that it possessed powers similar to those of ergot of rye in arresting hemorrhage, when dependent upon congested states of the *unimpregnated* uterus. In the few cases of labour in which it was tried, parturient action seemed to be very markedly and directly increased after the exhibition of the hemp; but far more extensive and careful experiments would be required, before a definite opinion could be arrived at relative to its possession of oxytocic powers, and their amount.—*Monthly Journ. Med. Sci.*, July, 1850.

48. *Oil of Turpentine in Uterine Hemorrhage*.—The number of the *Provincial Med. and Surg. Journal* for July 24th contains an epitome of observations of Mr. JOHN GRIFFITH, of Hereford, relative to the efficacy of large doses of oil of turpentine in arresting uterine hemorrhage. He gives the article in the dose of an ounce made into a draught with half an ounce of sweet almonds. This may be repeated in five minutes, if the symptoms are urgent.

49. *Cæsarian Section*.—Prof. SIMPSON read (June 5th, 1850) to the Edinburgh Medico-Chirurgical Society a case of Cæsarian section recently performed by Mr. HARLEY in the Edinburgh Maternity Hospital. The mother died from effusion into the air-passages, consequent upon disease of the heart. The Cæsarian operation was had recourse to by Mr. Harley, a few minutes after her death, and the child was now doing well.

The Professor also read at the same meeting another case of Cæsarian section, performed upon a living mother by Dr. NIMMO of Dundee. In this case there was extreme deformity of the pelvis. The mother died a few days after the operation. The child was saved. The pelvis, a fine example of malacosteon, was exhibited to the Society.

The PRESIDENT remarked that a woman whose osseous system was in the condition indicated by the pelvis on the table was certainly a very unfavourable subject for any surgical procedure. He agreed with Dr. Simpson that great credit was due to Mr. Harley for the promptitude and resolution which he had shown in operating on the patient in the Maternity Hospital. It was remarkable that the mothers who had had Cæsarian section performed in this country had all died; yet there were records of cases, in which the abdomen had been torn open by a cow's horn, and in which both child and mother had recovered.

Dr. SIMPSON spoke of the rarity of the Cæsarian operation in Scotland. It had not been performed on the living mother in Edinburgh for fifty years, nor in Dundee since 1823. Dr. S. alluded to two cases in which nature had accomplished delivery by rupture of the uterus, and subsequent laceration of the abdominal parietes. There were two cases on record in which the abdomen had been torn open, and the child turned out by goring by the ox's horn; a third occurred in India, near the military station where his friend Dr. Balfour happened at the time to be; and a fourth had been mentioned by Dr. Thatcher to Dr. S., as having occurred in the King's Park, in Edinburgh. In all these four, the mothers recovered. The successful result of such cases, and under such rude surgery, showed that the soundness of the constitution of the patient formed the most important element in the result. It had failed often, as in Dr. Nimmo's interesting case, when performed with all surgical tact and care, but when, as in this case, the constitution of the patient was unsound, and previously

broken by the preceding labour. He had lately, when at Bonn, an opportunity of seeing a woman who had been thrice operated upon by Professor Kilian, and who looked forward with great seeming indifference to the probability of a fourth operation being requisite.

Dr. THATCHER had had considerable experience of the operation as performed after the death of the mother. It had been, he thought, too much neglected after cases of sudden death; indeed, he considered it a duty to perform it in all such cases, if pregnancy was advanced to the seventh month, and if, from stethoscopic or other evidence, any sign of the vitality of the child was obtained. That the child was to a certain extent endowed with a vitality independent of the mother, was quite certain, and was shown by the motions observed in utero after the death of the mother, and by the successful result of cases in which the section was performed in such circumstances. In three of the cases in which he had himself operated, the child lived for two or three hours. The operation might be the means of saving many lives. In the case alluded to by Dr. Simpson, where the operation was accidentally performed by a cow's horn, the child was saved as well as the mother.

Dr. W. T. GAIRDNER referred to Buffon's experiments upon the extreme tolerance of asphyxia, observed in animals just born.

Dr. SIMPSON said that the tolerance of injuries decreased directly as the age of the child increased. In corroboration of this doctrine, he instanced the extraordinary spontaneous amputations which take place in utero, and expressed his belief that, in early foetal life, the head itself was sometimes destroyed by inflammation and the process of spontaneous amputation, without the existence of the foetus being necessarily compromised. The experiments of Buffon had been generally confirmed by Edwards, and it was quite clear that newly-born animals could bear a want of respiration for a considerable time. Baillard, who made many accurate observations in the Hôpital des Enfants Trouvés, never observed symptomatic or traumatic fever in a child under a month old. The nearer the condition of the foetus was to that of the lower animals, the greater was its tolerance of injuries, and its power of repairing them. Some years ago, he showed to the Society several cases of intra-uterine amputation of the arm, in which there was an attempt at the regeneration of the hand, such as is seen after injuries of the extremities in amphibia, &c.—*Monthly Journ. Med.*, July, 1850.

50. *Skoda on the Causes of Puerperal Fever—Experiments on Animals.*—In a paper read before the Medical and Chirurgical Society of London, on November 28th, 1848, and published in volume xxxii. of the Transactions of that Society, Dr. Routh brought before the notice of the British medical public the discovery, by Dr. Semmelweis, of Vienna, of the cause of the great frequency of puerperal fever in the lying-in institution of that city—viz., the introduction of poisonous animal matter into the uterus by the hands of the accoucheurs. And he also referred to the success which had attended the preventive means recommended by Dr. Semmelweis, of washing the hands with chlorinated water after making post-mortem examinations. [See number of this Journal for April, 1849, p. 509.] Dr. SKODA, of Vienna, has also examined the subject, and has laid before the Academy of Sciences of that place the result of his investigations, which have been published in the *Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien* for February, 1850. The first part of his communication refers to the circumstances which led to the discovery made by Dr. Semmelweis; and his remarks are confirmatory of what has already been laid before the profession in this country by Dr. Routh.

The second division, of which we shall give a translation, refers to the measures necessary for ascertaining the correctness of the results at which Dr. Semmelweis has arrived. On this subject, Dr. Skoda writes as follows:—

When the washing of the hands in chlorinated water had been for some time in use, with apparently highly successful results, Dr. Semmelweis communicated his idea to Professor Rokitansky, myself, and other physicians of the hospital. We did not doubt for a moment that his view would prove correct; and I lost no time in making the discovery known to the Director of Medical Studies, in the expectation that a committee would be appointed to inquire

into such an important fact. But my representation appears to have been merely made known. A more probable opportunity of bringing the matter publicly into notice was the great number of deaths in the Lying-in Hospital at Prague, which were probably due to the same cause as those at Vienna. I therefore recommended the use of chlorinated water in Prague; but as it seemed to be the general opinion in that place that puerperal fever was propagated by epidemic influences, the means recommended by me seem to have had little or no trial.

Dr. Semmelweis applied to the obstetric professors in foreign countries to test the correctness of his observations; but the only precise answer received was from Kiel. Dr. Michaëlis, the superintendent of the lying-in institution of that place, reported on the 18th March, 1848, that the hospital had been closed from the 1st July to November, 1847, on account of the great mortality which prevailed. At the latter period, it was again opened, and the disease broke out as severely as before. In December, 1847, Dr. Michaëlis heard of the discovery of Dr. Semmelweis, and forthwith instituted the use of chlorinated water. Subsequently to that period, there was only one case of puerperal fever; and that one is attributed by Dr. Michaëlis to the use of a catheter which had not been properly cleaned. On the other hand, Professor Kiwisch, of Würzburg, stated that he had frequently attended pregnant and puerperal women immediately after making *post-mortem* examinations, without observing any untoward results.

At my suggestion, a commission of the professors of the college was appointed to examine into the following questions:—

(a) From the construction of tables, in which were given the name of each assistant or student attending on the cases, to determine whether the number of cases of puerperal fever bore any relation to the employment of the assistants and students in the dead-house. (b) To examine into the so-called street-births (*Gassengeburten*). When a female enters the hospital soon after being delivered, no further manual examination is made, except for the purpose of removing the placenta, or of treating some disordered condition of the generative organs. If the opinion of Dr. Semmelweis be correct, these cases should present but few examples of disease. (c) To inquire of the lying-in institutions in Austria, and elsewhere, whether the mortality is less where there can be no source of infection from the handling of dead subjects. (d) To make experiments on animals. My suggestion was adopted by a great majority of the professors, and a committee was appointed, but the government forbade the proceeding of the committee. Under these circumstances, I requested Dr. Semmelweis to undertake the experiments on animals. These were accordingly performed on rabbits.

EXPERIMENT I. On March 22, 1849, a female rabbit, which had been delivered for a quarter of an hour, was operated on. A brush, dipped in some ill-coloured exudation from a case of endometritis, was introduced into the cavities of the vagina and uterus. The animal appeared well up to the 24th April, when it died.

Post-mortem appearances. The plicated mucous membrane of the cornua uteri was covered with a dirty reddish-gray fluid exudation. The left pleural cavity contained some fluid; the lower lobe of the lung on that side was covered with a pale yellowish false membrane. Its parenchyma, as well as that of the posterior and lower third of the upper lobe, was in a state of gray hepatization; the rest of this lung, as well as the right, contained air, and was of a vermilion-red colour. The heart was enveloped in a finely-villous layer of pale yellow exudation, and there were a few drops of fluid matter.

EXPERIMENT II. On the 12th April, a female rabbit was treated in a similar manner to the last, about twelve hours after having been delivered of five young ones; and the application was repeated daily. On the 14th April, the animal expressed pain on the introduction of the brush, the uterus contracted with force, and some thick yellowish-white exudation was pressed out. On April 17th, the animal appeared decidedly ill; on the 22d, diarrhoea set in; and the animal was found dead on the 24th. The brush had been introduced once daily up to the time of death.

Post-mortem appearances. The peritoneal cavity contained false membranes, gluing together some of the intestinal convolutions. There was a stiff yellow exudation on the mucous membrane and in the tissue of the vagina and uterus; the cornua of the uterus were moderately distended, and filled with a dirty reddish-gray exudation. The colon contained some follicles in a state of suppuration; its mucous membrane presented spots of the size of a lentil, partly suppurated, partly infiltrated with yellow exudation: each of the spots was surrounded with an injected vascular area. The lungs were of a clear vermilion red; the upper lobe of the left lung contained a condensed spot, of the size of a bean, infiltrated with blood, and having a purulent point in the centre.

EXPERIMENT III. On the 15th April, a female rabbit, which had been delivered about ten hours, was treated in the same way: and the application was repeated daily up to the 21st. On the 17th, the animal gave signs of pain, and expressed some purulent exudation from the uterus. On the 26th, diarrhoea occurred.

Post-mortem appearances. The abdominal cavity contained a moderate quantity of fluid and membraniform exudation, gluing together some of the intestinal convolutions. The mucous membrane of the vagina and uterus was covered and infiltrated with a yellow intimately adherent deposit; the cornua of the uterus were much distended, and filled with a reddish-gray dirty matter. The liver presented some spots of the size of lentils, infiltrated with a purulent exudation. Near the termination of the *processus vermiformis*, the mucous membrane of the colon presented a spot larger than a lentil, surrounded by an injected area of vessels; it was ulcerated, and covered with a pale yellowish exudation.

EXPERIMENT IV. On May 24th, a strong rabbit was operated on, an hour after being delivered of five young ones. The brush was dipped in the blood (mixed with water) of a man who had died of marasmus thirty-six hours previously. On the 25th, it was charged with some pleuritic exudation; and on the 26th and 27th, with some exudation from the peritoneum of a tuberculous patient. The brush was not again introduced. The animal continued apparently in perfect health, and again brought forth young on the 24th June.

EXPERIMENT V. On the 2d of June, some of the peritoneal exudation which had been used in Exp. IV. was applied to a rabbit about twelve hours after delivery; and the application was repeated on the 3d, 4th, and 5th of the month, after which it was discontinued. The animal appeared in good health. On the 28th, it again brought forth young; and the brush was again applied on the 29th and 30th, charged with pleuritic exudation. The animal continued well, and was killed on the 17th July in performing another experiment. No alterations referable to pyæmia were observed on necroscopic examination.

EXPERIMENT VI. On the 10th of June, some purulent exudation from the pleura of a man was introduced into the uterus of a rabbit, some hours after delivery; and, from the 11th to the 30th, the brush was dipped in some peritoneal exudation from a man who had died of typhus. The animal continued well, and again brought forth young on the 13th July. On the latter day, the brush was again introduced, and the application was repeated daily up to the 24th. The animal became lean, had diarrhoea, and was found dead on the 30th.

Post-mortem appearances. The pericardium contained a few drops of flocculent serum. There was a dirty white uneven vegetation of the size of a pea, on the tricuspid valve, pressing against the *conus arteriosus*; and a similar body was situated on the free margin of one of the divisions of the valve, intimately united with the endocardium covering its muscle. The inner surface of the right ventricle was covered with a yellowish-white granular false membrane. The peritoneum contained some pseudo-membranous and fluid exudation. In the periphery of the liver, near the lower surface, there was a spot of the size of a pea, infiltrated with a stiff yellowish deposit. In the uterus, several veins of remarkable thickness, between the body and the right cornu, were found filled with a stiff yellow exudation.

EXPERIMENT VII. On June 16th, some hours after parturition, the brush was applied, charged with pus taken from an abscess between the ribs of a person who had died of cholera. The operation was repeated daily up to the

3d of July; but the animal remained well, and was again delivered on the 18th of that month. The experiment was now modified, so as to avoid the chance of producing mechanical irritation with the brush. The fluid was injected by means of a gonorrhœa syringe, with a tube three inches in length. Soon after the injection, the animal again ejected the fluid. It was daily repeated up to the 24th of July, and the animal was found dead on the 29th.

Post-mortem appearances. Both pleural cavities contained some thickish yellow exudation. In the peritoneum, there were two ounces of exudation, partly coagulated in the form of a membrane. The uterus was normal, but pale.

EXPERIMENT VIII. On June 24th, the same animal was operated on, as had been the subject of Experiment IV. The brush was applied daily until July 8. The animal wasted away, was seized with diarrhœa, and died on the 25th.

Post-mortem appearances. The peritoneum contained some yellowish exudation. Closely adhering to the posterior wall of the uterus, there was a thin dirty-yellow false membrane; the cornua contained some dirty reddish-gray fluid exudation; and, on the border between the vagina and uterus, corresponding to the orifice of the urethra, there was a superficial sloughed spot of the size of a bean, infiltrated with purulent exudation. The ulcer in this situation had uneven undermined edges, and the base was covered with a layer of exudation. The substance of the vagina, for an inch in length, was infiltrated with a deposit of a line in thickness.

EXPERIMENT IX. On August 8th, some exudation from the peritoneum of a male subject was injected, a few hours after the animal had brought forth young. It was soon rejected; and the operation was repeated daily until the 15th. The animal appeared ill on the 13th, became lean, and was found dead on the 20th.

Post-mortem appearances. There was some flocculent exudation in the peritoneum, and numerous yellow inflammatory spots, mostly of the size of hemp-seeds, on the periphery of the liver. On the mucous membrane of the posterior wall of the uterus, there was an excoriated spot of the size of a lentil; the substance of the organ was infiltrated with yellow exudation as far as the peritoneum. The right cornua was so much infiltrated as to be of double its normal size. There was some free exudation on its mucous membrane. The veins in both broad ligaments were filled with exudation.

Remarks. It is scarcely necessary to mention that the changes found in the bodies of the rabbits were the same as those which occur in the human body as a consequence of puerperal disease and of pyæmia in general. It might be objected to these researches that in them a greater quantity of putrid matter was employed, and that it was, in eight of the experiments, introduced for several days in succession, while, on the other hand, the quantity of putrid matter remaining on the hands, when they have been washed—as is always the case—after making *post-mortem* examinations, can be but very small. But this objection does not appear to me to possess much weight, seeing that the operation of putrid matter on the blood does not depend on its quantity; for infection not unfrequently takes place through a wounded part, which is almost imperceptible from its minuteness. It would be judicious, in order to remove all doubt, that more extensive and varied experiments on animals should be performed.—*Lond. Journ. Med.*, July, 1850.

51. *Chloroform in Puerperal Convulsions.*—Dr. KEITH gives the following particulars of a case of puerperal convulsions treated by chloroform. A lady, about the end of the seventh month of her first pregnancy, was suddenly seized with a convulsive fit, after suffering more or less for some days from headache, and slight feverish symptoms. The first fit occurred three hours before Dr. K. saw her, and in the interval she had three others. She had been bled, and the bowels had been freely opened. The fits ceased for a time, but after four hours they again recurred, and four followed each other in the course of less than an hour without any return to sensibility during the intervals. The bleeding was repeated very copiously, but seemed to have no effect in stopping the fits, or even in rendering them more moderate. Just as the fourth fit was coming on, the chloroform was administered. It had an immediate effect in restraining the convulsive

efforts, and she soon became perfectly quiet. Dr. K. had ascertained, on first seeing the patient, that the os uteri was quite shut, and there had been no sign of labour coming on up to this period. Now, however, from the motions and expression of countenance, while she was still under the chloroform, he was led again to examine as to the state of the uterus, and found that regular contractions had come on. The action of the chloroform was kept up, the labour went on steadily, and in six hours she was delivered of a still-born foetus, without any recurrence of the convulsions. She slept for nearly an hour after the termination of the labour, when she awoke in a confused state, but perfectly rational, and almost free from headache. She made a most favourable recovery; indeed she had not a single bad symptom from the time that the chloroform was administered. The urine was highly albuminous, becoming almost solid on exposure to heat. The coagulability gradually went off, and after a fortnight there was scarcely a trace of it.—*Monthly Journ. of Med.*, Aug. 1850.

52. *On the Use of the Speculum in the Diagnosis and Treatment of Uterine Disease.* By ROBERT LEE, M. D.—[We invite especial attention to the following abstract of a paper on this subject, read before the Royal Medical and Chirurgical Society, on the 28th of May last, with the report of the discussion to which it gave rise. Fully admitting, as every one must do, the value of the speculum in the diagnosis and treatment of uterine disease, it can no longer be conceded that this and other uterine instruments have been grossly abused by individuals for very unworthy views. Several years ago, we had occasion to denounce a practice advocated by a physician of this city, of introducing large bougies for the treatment of excessive sensibility of the vagina, and we are happy to believe that, though the author may have derived pecuniary advantage from the practice, he has found no imitators: The following exposition will doubtless tend to restrict the use of the speculum to proper cases, and also correct some important errors in uterine pathology.]

“The author commences this paper by observing that the *speculum matricis* was said by *Ætius* to have been invented in the days of the Emperor *Domitian*, but that it must have been known to the ancients at an earlier period. In 1818, a bronze instrument, consisting of three branches, two handles and a screw in the centre, was dug out of the ruins of *Pompeii*, which has been preserved in the Museum at *Naples*, and of which there are a description and representation in *Vulpes’* work, which, through the kindness of Dr. *Greenhill*, of *Oxford*, was placed on the table of the Society. This instrument is called *speculum magnum matricis*, and the author observes that there can be no doubt that it was intended to bring the os uteri into view, and is probably one of the most rare and perfect bivalve speculums that has since been invented. Allusions are then made to the specula of *Avicenna*, *Ambrose Paré*, *Allman*, and *Johannes Rufficus*, some of which were not uterine specula, but midwifery instruments. The author then states that, in 1801, Dr. *Récamier*, of *Paris*, began to treat ulcers of the uterus and vagina with topical applications, like those of the throat. By means of a slender tin tube, he applied to the ulcerated surfaces various simple substances, as *mel. rosarum* and *syrup of carrots*, and to these he states that he owed their marked amelioration. In the year 1816, Dr. *Récamier* enlarged the diameter of his conical tube, that the morbid parts in cancer might be brought more completely into view, and cauterization employed. Of this treatment the most favourable results were likewise published, although its total inefficacy was soon demonstrated. ‘The cruel practice of extirpating with the knife’ the whole or portions of the cancerous or supposed cancerous uterus now began to prevail, and became, both in *Paris* and *London*, the source of great popularity and gain to some individuals, and most flattering reports of the results were published. In the *Memoir on Amputation of the Neck of the Uterus*, presented by M. *Lisfranc* to the Institute of France, in 1834, the author stated that, of ninety-nine operations for cancer of the uterus, eighty-four had been successful. The statements made in this *Memoir* are now universally disbelieved; and no man possessed of the most slender stock of sound pathological knowledge, and of the ordinary feelings of humanity, would, at the present time, propose to extirpate the whole, or any por-

tion, of a cancerous uterus. In the hands of M. Recamier and M. Lisfranc the speculum led only to barbarous and useless cauterizations and operations. The instrument soon came to be extensively employed in the investigation of venereal diseases in the prisons, hospitals, and dispensaries of Paris, and many morbid appearances, very vaguely defined, were reported to have been discovered, by the aid of the speculum, which otherwise must have escaped detection. The speculum then became an instrument of police, and the sanitary laws of the principal cities on the Continent were regulated by the information thus supposed to have been obtained. The method of conducting the examination of the prostitutes with the speculum is then described, and it is stated that some of the most eminent surgeons in Germany and France conducted these public examinations, and endeavoured to perform the difficult and indelicate task of separating the clean from the unclean. The object of the author in this communication is stated to be, to give concisely the results of his observation, during the last twenty-three years, on the use of the speculum in the diagnosis and treatment of uterine diseases, believing that at the present time it is equally important to the medical profession, and to society at large, that the legitimate use and real value of the speculum in practice should be accurately defined and made known. In the two great classes of organic diseases of the uterus—malignant and non-malignant, and in all the displacements of the uterus, he says he has derived little or no aid from the speculum, in their diagnosis and treatment. Several cases of ulcerated carcinoma are then related, in which the speculum and ignorance of uterine pathology appeared to have led to the commission of the most grievous mistakes. The author then proceeds to give a sketch of uterine disease before the middle period of life, and observes that an examination of the physical condition of the uterus, in unmarried women, either with or without the speculum, he has always refused to make, even when requested to do so, unless pain, severe and almost constant, in the region of the uterus, existed; leucorrhœa or hemorrhage, which did not yield to treatment; and where the symptoms did not make him strongly suspect the presence of some displacement or organic disease. In cases of obstinate leucorrhœa he has often employed the speculum, in married women, after he had failed to detect the existence of organic by the ordinary mode of examination. The appearances observed in these examinations are then minutely described, and the fact stated, that the author had never seen ulceration of the os and cervix uteri, in such a case, which was not of a specific character, especially scrofulous and cancerous. The lamentable effects of applying *potassa fusa* to the os and neck of the uterus are then given, in the histories of several cases. The following most important statistical statements were then given by the author: 'In the year 1832,' he says, 'my colleagues at the St. Marylebone Infirmary—Dr. Hone, Dr. Sims, Mr. Stafford and Mr. Perry, late secretary of the Society—at my request, desired that the uteri of all the women who died in the wards should be carefully examined, and that they should be preserved for my inspection when any morbid appearance was observed. From 1017 post-mortem examinations of females of all ages, made by Dr. Boyd (after deducting those of children and others, in which special mention is not made of the uterus), there were found 708 where either the state or weight of the uterus was noted. In thirteen of these there was congestion or inflammation, which had no specific character, and in some the inflammation was limited to the fundus, and could not have been detected unless the uterus had been removed or cut open. In at least three there were enlargement and induration, which did not appear to have any specific character, and in two there was extreme wasting; twenty-four were puerperal cases, thirteen dropsy of the ovaries or Fallopian tubes, in thirty-one fibrous or bony tumours, and in twenty-one, cancer.' 'My impression is,' adds Dr. Boyd, in the same report, 'that ulceration of the neck or mouth of the womb is an exceedingly rare disease; else I must,' he says, 'have observed it, having cut up and weighed many hundreds; it could scarcely have escaped my notice.' Dr. Allen, the present resident medical officer at the St. Marylebone Infirmary, has held the office about twelve years, and he states to me that he has examined, or been present at, the examination of the bodies of more than 1000 adult females, and of

these he does not believe that he ever saw more than twenty examples of ulceration of the os uteri of any kind, scrofulous or venereal, excluding cases of ulcerated cancer of the uterus, which were known to exist before death. Dr. Allen further states that he has observed in some cases a portion of the mucous membrane of one lip slightly abraded; this he has seen occasionally, but not often. Mr. Prescott Hewett was six years curator of the Museum of St. George's Hospital, and conducted all the post-mortem examinations. He states that during that time he could not have examined fewer than 600 uteri, and very seldom, if ever, did he meet with anything which could be called ulceration of the os and cervix uteri, independent of scrofula and cancer. Mr. George Pollock held the same office for three years, during which time he examined the bodies of 300 women, and in every case the uterus was cut open and examined. In four cases, uteri ulceration was observed, but three of these were scrofulous patients, and scrofulous ulcerations existed in other organs. In the fourth case, the ulceration must have been cancerous, as it involved the vagina extensively, as well as the os uteri. Mr. Hewett and Mr. Pollock did not, therefore, observe a single example of simple ulceration of the os and cervix uteri in the 900 uteri they examined, which confirms the accuracy of the opinion given by Dr. Boyd, that ulceration of the neck or mouth of the womb is a very rare disease. Mr. Gray succeeded Mr. Pollock at St. George's Hospital, and he examined 180 uteri. Distinct ulceration of the os and cervix was only observed by him in three uteri, and the nature of the ulceration in these three cases was not determined with certainty. Mr. Gray states to me, further, that redness, slight abrasions, and granulations were sometimes, but not frequently, observed. Neither in the living nor in the dead body, says the author, have I ever seen ulceration of the os and cervix uteri, except of a specific character, and especially scrofulous and cancerous; but I have met with a considerable number of cases in which it had been affirmed by others to exist, after deliberate and repeated examination by them with the speculum, where I ascertained that ulceration did not exist in the os and cervix uteri, nor disease of any kind. Cases are then given in which this gross mistake had been committed, and the paper concludes with a remarkable case of a lady, aged fifty (communicated by Dr. J. Copland), in which the speculum was used with fatal effect, when it was ascertained, after death, that the uterus and all its appendages were perfectly healthy. There were marks of recent violence at the orifice of the vagina, and the hymen was torn. Lymph, recently effused, was found coating the upper part of the spinal cord.

"Mr. Acton considered the Society were indebted to Dr. Lee for the paper which had just been read. It was always satisfactory to expose any kind of abuse, and he who did so was entitled to the thanks of the community. Why, however, the speculum had been especially taken up on this occasion he was at a loss to discover. Why, were not drugs abused, which were in use long before the speculum was brought to our aid in the cure of uterine disease? Was not Dr. Lee aware that patients suffering from disease of the uterus were for years under treatment by mere drugs and washes? He (Mr. Acton) contended that, if the speculum had been abused, so had the means just mentioned. The abuse of the speculum was no argument against its legitimate employment. Was not the stethoscope abused on its first introduction to practice? He regretted that Dr. Lee had not mentioned names in his paper, so that the odium might fall only upon those who deserved it. The paper had spoken of the exposure to which women were subjected who were examined by the speculum in France. He denied this generally. He himself had had to examine eighty women of a morning; the examination was conducted with the strictest regard to decency. In the great London hospitals, as, for instance, St. Bartholomew's, women were examined before a crowd of students, and close to other women. In Paris, on the contrary, the female was taken into a side room, a few students only were admitted, and a screen was used. The indelicacy was certainly in favour of the mode of examination practiced in this country. With respect to the statement in the paper regarding the insertion of an instrument into the os uteri to the extent of three inches, he might merely observe that the uterus would not admit of an introduction to such an extent. He mentioned this to

show the danger of using loose statements. With respect to the absence or presence of ulceration, as shown post-mortem, he might mention that this was scarce evidence sufficient to show what had existed before death, for the marks of disease might have disappeared. He had examined after death the woman Tapp, who had infected O'Connor with gonorrhœa. He could trace no ulceration; but did this prove that none had existed during life? He contended that, in consequence of the speculum not being in use in the hospitals of this country, many women were only partially cured, and were turned out 'well,' merely to infect fresh men. The sanitary value of the speculum, in this respect alone, should be placed against the abuse of the instrument as something in the opposing balance.

"Dr. ASHWELL said the Society were indebted to Dr. Lee, who had ably dealt with what had become a great professional grievance. He (Dr. Ashwell) had no personal feeling on the subject under discussion, but he had been engaged somewhat extensively in public and private practice for many years. The result of his observations had been decidedly opposed to the views regarding uterine pathology, which had of late years been so industriously propounded. First, he denied at once the accuracy of the conclusions which some had arrived at respecting the frequency of ulceration and inflammation of the uterine neck. He had listened with attention to the remarks of Mr. Acton respecting the doubtful character of post-mortem examinations in deciding the question of the existence of ulceration during life. But what could be said of a thousand cases of actual uterine disease which had come under his observation in Guy's Hospital? These thousand cases had not only been examined by himself, but had been witnessed by pupils in the constant habit of observing uterine disease. They had been observed, also, without any reference whatever to deciding the question of the frequency of ulceration. And what was the result of these thousand examinations? Why, that inflammation of the neck of the uterus was found to exist in twenty-five cases only. These were cases, too, not selected, occurring chiefly amongst the poor, and taken at random from the great mass of cases coming to the hospital, and referred to him as obstetric physician. Taking this fact with the admirable statistical records of Dr. Lee, he contended that together they formed a series of facts and conclusions decidedly opposed to the assertions lately made with respect to the frequency of inflammation of the neck of the uterus. If the crowded room in which they were assembled was polled, and the experience of those gentlemen who had treated a large number of cases of uterine disease ascertained, he was certain that the result would be fatal to the statistics of those who had lately written on uterine disease. (Hear! hear!) Should the contrary, however, be the result, and these cases proved to be as numerous as stated, then arguments against the use of the speculum were at an end. The question, then, as to whether it was desirable to violate all the natural feelings of modesty of English women, would be answered by the fact that disease was present, and therefore the use of the instrument was not only justifiable, but necessary. But the statistics before us enable us to stand upon other grounds, and to declare the speculum not necessary to be employed as it now was, for the disease was not of the frequency which had been stated by the advocates of the use of the instrument. As now used, he had no hesitation in declaring his conviction that the speculum was subversive of female delicacy and female safety. He asserted that in nine out of ten cases in which it was now employed its use was unjustifiable. He had devoted many years of his life to that branch of the profession which had for its object the treatment of diseases of women. He had had a moderate share of practice, and he could not help thinking that the use of the speculum, as practiced by some medical men, amounted almost to a professional dishonour. (Hear, hear.) This feeling had been slowly forced upon him; but it was a powerful one—so powerful, indeed, that if the speculum was continued to be employed as it now was, he knew not whether he should not feel it necessary to withdraw from the treatment of the diseases of women altogether. He was pleased that Dr. Lee had alluded to the use of other instruments. He (Dr. Ashwell) could add cases to the fatal one related in the paper from the rash use of badly constructed instruments. The narration of

the cases, however, would only harrow up the feelings of the Society, and he would not therefore further allude to them. Dr. Lee deserved well of the profession and of society, but more particularly of the female portion of it, for his efforts to retard the progress of this most dangerous instrument. (Loud cheers.)

“Dr. MURPHY had great reluctance in rising to speak on the subject under discussion, because he felt himself somewhat in the light of a defendant. He thought, however, that a distinction had not been drawn between the use and the abuse of the speculum. He perfectly agreed with Drs. Lee and Ashwell in all they had said, so far as the abuse of the instrument went; but, on the other hand, he knew no sufficient substitute for it in the treatment of those cases of uterine disease in which its employment was indicated. With respect to the frequency of inflammation of the neck of the uterus, he had certainly been surprised at the statement of Dr. Ashwell, that he had only found twenty-five instances of this pathological condition in 1026 cases of uterine disease. He (Dr. Murphy) could only say that he was in the daily habit of seeing cases of inflammation of the neck of the uterus in all the stages of its progress. If he did not do so, then he was ignorant of what inflammation really was. He agreed with Dr. Lee on the impropriety of using the speculum and caustics in the cases of carcinomatous and other diseases he had mentioned. With respect to the objection to the words ‘inflammation’ and ‘ulceration,’ he thought, after all, the dispute was merely about terms. Dr. Lee would find in the cases he (Dr. Murphy) alluded to, a circumscribed inflammatory surface secreting pus, call it what we might. What treatment would you adopt in such a case? He (Dr. Murphy) said that constitutional treatment without local applications would be of no use whatever. He had seen cases of this kind going on from year to year in which medicines had been of no benefit whatever. But when the cause was found out to be the condition of the cervix he had named, and the treatment adopted which would have been pursued in such a condition of other mucous membranes, the patient got well. He had seen hundreds of cases of uterine disease, and he declared that seven-tenths of these were inflammation of the cervix uteri. If inflammation of the uterine neck were properly treated, many females would be saved from most severe and prolonged anxiety and misery. With respect to the influence of the use of this instrument on the female character, let it be remembered that the name of Englishwomen in every age was chastity, and it could not be believed that they would connive at indecency of conduct in those who went about unnecessarily employing this valuable instrument merely to raise their own characters. No! it was clear that from the way in which they submitted to its use, they found benefits from it which they had not experienced from any other plan of treatment. It was right to mention that certain unfortunate cases had occurred from the use of this instrument, in consequence of cases falling into the hands of those who did not know the disease under treatment. But another mischief besides mistaking hysteria for ulceration had occurred, and this was the production of fatal peritonitis from cauterizing a fold of the mucous membrane of the vagina in mistake for the uterine neck. But was this blundering of unskilful practitioners an argument against the use of the speculum in the hands of the well informed? In conclusion, he would beg of those who were opposed to the speculum to judge for themselves on the subject, and to separate the use from the abuse of the instrument. (Cheers.)

“Dr. HENRY BENNET remarked that, although there were many points in Dr. Lee’s paper with which he did not agree, he considered it, on the whole, a valuable contribution to medical literature, cautioning the profession, as it did, against the abuse of instrumental treatment. The most important feature of the essay was, in his opinion, the admission, on the part of Dr. Lee, of the existence of the inflammatory lesions of the cervix uteri, which had been described by modern writers—ulcerations in their various forms and stages. The crowded state of the meeting was also a ‘sign of the times,’ as it showed the great interest which the profession was beginning to feel on the subject. Dr. Lee’s principal objections appeared directed against the asserted frequency of these inflammatory lesions; against the use of the more severe escharotic treatment, and especially of *potassa fusa*; and against the examination of virgins. Dr.

Lee attempted to disprove the frequency of inflammatory ulceration of the cervix by the results of post-mortem examinations made many years ago at the Marylebone Infirmary, and more recently at St. George's Hospital, and also by instances of erroneous diagnosis which had fallen under his own observation in private practice. He (Dr. Bennet) did not admit either argument. It was a well-known fact, in the history of medical science, that the most eminent pathologists often passed over important lesions without observing them until their attention had been thereto directed; and when these researches were made at the Marylebone Infirmary, the practical knowledge of the inflammatory lesions of the cervix uteri did not exist in the profession; nor did he consider—without in the slightest degree calling into question their high attainments—that the prosecutors of St. George's alluded to had shown that they possessed the practical knowledge of minute uterine lesions in the living, that could alone give weight and importance to their researches on the dead. Moreover, it must be remembered that the females in question died from general disease, without the existence of any uterine ailment having been suspected, and that the discovery of such lesions, on even a very limited proportion of their numbers, was of itself a clear proof of the not unfrequent existence of the disease. It was not likely that these forms of disease would be frequently observed after death, as they were not fatal. Although he (Dr. Bennet) had seen many hundred cases of uterine ulceration during the last seven years, he had only lost one patient while under treatment, and that was a case of phthisis. The cases of erroneous diagnosis proved nothing at all with respect to the question at issue; but he (Dr. Bennet) would take that opportunity of most emphatically repudiating all connection with those cases. Not one of them had been under his care, and he could defy Dr. Lee, or any person present, to say to the contrary. In the course of the discussion, Dr. Ashwell had denied the frequency of ulceration of the uterine neck, and had appealed to his experience at Guy's Hospital, where he had examined and treated 1000 cases of uterine disease, and only met with twenty-five cases of inflammation of the cervix. He was sorry to say that there was no possibility of reconciling Dr. Ashwell's assertions with the results at which he (Dr. Bennet) had arrived, and which he had published in the second edition of his work on Uterine Inflammation—viz., that out of three hundred cases presenting uterine symptoms, he had found 243 of inflammation, and 222 of ulceration. Either he or Dr. Ashwell must be totally wrong; there was no medium. He himself explained the discrepancy by supposing that Dr. Ashwell did not consider, at the time, that the symptoms presented by his patients warranted a speculum examination, and had not consequently recognized the real nature of their complaint in the majority of instances. His own statistical researches were commenced because he was startled, on the perusal of Dr. Ashwell's work, to find results which clashed so much with his own experience, and he must be either right in his conclusions, or labouring under some severe form of hallucination, which led him to think he saw what in reality did not exist. He was, however, quite prepared to put his views to the most open and decided test, and challenged the Society, or any gentleman present, to name a committee, to examine with him fifty, or a larger number of uterine patients in any hospital or public institution in London, and he would accept the results. If his views were correct, they would stand such a test in any country, in any institution; and if they were false, the sooner they were proved to be so the better. With reference to the use of severe escharotics, and principally of potassa fusa, which he congratulated himself on having introduced into British practice, they were absolutely necessary in some cases if the patient was to be cured. At the same time, an agent so powerful as potassa fusa ought to be used with the greatest caution, and was as much capable of producing mischief in rash and unskilful hands as the knife itself. He likewise congratulated himself in having been the first to point out to the profession the existence of severe inflammatory ulceration in the virgin, as he had thus been the means of rescuing many interesting females from a life of intense suffering, and possibly from premature death. It was a conscientious feeling of imperative duty which had first led him to overcome his own scruples, and those of his patients and their friends, in these distressing cases, and he had never done so except in cases in

which every other feasible means of treatment had been in vain tried, and in which the patients appeared devoted to hopeless suffering. He had brought with him, to show to the Society, the uterus of a young virgin lady of eighteen, who died of pneumonia, under the care of Mr. Anderson, his late colleague at the Western Dispensary, which presented an admirable illustration of severe and extensive ulceration. Would any gentleman present say that, were his own daughter reduced to the verge of the grave by such a disease, he would object to instrumental treatment, all other means having failed?

"A VISITOR, who, in answer to a question, said, 'my name is Jones,' remarked that to himself was due the credit of having first recommended the extensive use of the speculum in this country. In the year 1832, he had given lectures on the various forms of specula he wished to recommend at the Blenheim Street Dispensary. Since that period, he had treated 65,000 cases of disease in women. Of these, '3000, or about one in every eighteen,' did not yield to the ordinary constitutional treatment employed. In these cases, certain lesions were discovered, call them what we like, which would not have been detected without the aid of that instrument. He saw no more harm in the use of a speculum than in the use of a spoon to ascertain the condition of the throat. (Laughter.) But it did not follow from this that every woman need have the speculum employed, nor be subjected to the application of leeches, caustic, &c. He would, however, declare his conviction that thousands of women had been made happy and comfortable from the treatment which had been indicated by the speculum. He advocated discussion on the subject, for he felt convinced that the more the matter was canvassed, the more valuable would the speculum be found.

"Dr. A. P. STEWART inquired whether it was not a fact that, in a great number of cases, a condition of the neck of the uterus had been found to exist, in which escharotics had been found of the greatest service? Yet Dr. Lee had altogether denounced escharotics, on the assumption, as he (Dr. Stewart) understood, that the condition of the uterus above referred to was similar to a granular condition of the conjunctiva, and might have been caused by the same means. He had seen a granular state of the uterine neck in from sixteen to twenty-four cases, varying from the size of a shilling to that of a half-crown, which rapidly got well under the local application of the solid nitrate of silver. He thought the potassa fusa, except in very able hands, might be productive of much mischief.

"It was now proposed to adjourn the debate until another evening, but eventually it was decided to carry on the discussion for some time longer.

"Dr. Locock, having been personally requested to give his views on the subject under discussion, rose, and said that it was not his intention to offer any remarks whatever on the present occasion. He had come, indeed, to receive, and not to supply, information. However, as he had been so pointedly called upon, he would say that he agreed with a great portion of what had been expressed by Dr. Lee in his paper, and thought that he deserved the best thanks of the profession for having pointed out, in so forcible a manner, the prevailing abuse of the speculum. The fact was that a certain number of men in the profession had unjustly and improperly employed the instrument to serve their own ends. In one point, he would even go farther than Dr. Lee, for he could state for certain that cases were even made by means of the speculum for no other purpose than to be a means of obtaining money. These, however, were the exceptions in our profession, and were not to be taken as a model. In our eagerness to denounce the unprofessional use of the speculum, we must not lose sight of its very great advantages. He, for one, should be sorry not to continue the use of this instrument, for he knew of no substitute for it. As to the talk of the indelicacy of its employment, that was all nonsense. When properly applied, there was no kind of exposure whatever. He had used it in a room when the father, the mother, or the husband of the patient had been present. His friend, Dr. Bennet, was in the habit of placing the patient on the back during examination; he (Dr. Locock) placed her on the side. Having done this, and having drawn the clothes or dress round the speculum, there was no more exposure to the surrounding parts than there would be of the face

in a mask, where the throat was examined. He certainly objected to the use of the instrument in unmarried females, if there were not sufficient grounds for its employment; but when ordinary means had failed, and ulceration was suspected, the only means to detect this was the speculum—and then he should employ it. As to the charge of breaking down the hymen, why, this was necessary sometimes to be done when the examination was made by the finger; but he never recollected a practitioner being abused for such a proceeding. He considered that there was no immorality or danger to female purity by the use of the speculum. The purity was mental, and not to be destroyed by a proceeding necessary, as this would be, in some cases of disease. Surgeons were certainly less particular than accoucheurs in exposure of the patient in their operations, and yet they met with no abuse. He could not help thinking that ulceration of the neck of the uterus must be a very frequent disease, looking at the great number of cases which came under his own observation. We detected by the speculum a thick glutinous discharge oozing from the os uteri, and not found in the vagina; we concluded, therefore, that this must come from the uterine neck. This condition could not be treated successfully by simple injections into the vagina. Many years ago, before the speculum was in use, Sir Charles Clarke (who would have used the speculum if in practice at this time) had described the discharge as a consequence of inflammation of the neck of the uterus, and to be of common occurrence. The speculum had demonstrated the correctness of this diagnosis. With regard to the statistical details of Drs. Lee and Ashwell, he would remark that the lesions might have been pale and unobserved; besides, the patients died of other diseases, this complaint not being of a fatal character. [Dr. Ashwell here remarked that none of his patients had died.] The statistics of ulceration could only be arrived at by the experience of men who practiced in that particular department. Statistics of post-mortem appearances would not give the result. Dr. Lee confessed to the use of the speculum when touch was insufficient for complete diagnosis. Now we had heard that the actual cautery produced no pain; and he had seen extensive cauterization which the patient did not feel. The absence of pain did away with one great indication of diagnosis from touch, and was an argument in favour of a judicious use of the speculum. In conclusion, he would remark that we were not justified in withholding the benefit of the speculum from our patient, any more than we should be in withholding a means of diagnosis when applied to other parts of the body. Of course he meant this remark to apply to the judicious and cautious use of the instrument. (Cheers.)

“Dr. LEE being loudly and universally called upon by the Society for a reply, rose and said—that it was now admitted on all hands that, in the diagnosis of the organic diseases of the uterus, malignant and non-malignant, and in every form of displacement of the organ, the speculum was wholly useless. In all the varieties of cancer of the uterus, not only was the speculum of no use, but it had been declared that evening to be positively injurious. It was impossible to believe that the gross mistakes respecting cancer of the uterus described in the paper could have been committed, if the speculum had not been employed, and the evidence furnished by the symptoms and the sense of touch had been wholly disregarded. Such mistakes were never committed till the speculum came into use, and the sense of touch was lost. It was important for the profession to know that there was no difference of opinion on this point—viz., that in all the organic diseases of the uterus, and in all the displacements, the speculum was of no use. In what diseases, then, of the uterus, we might now fairly inquire, did the instrument furnish aid to the diagnosis? The only answer given to the question this evening was that it was indispensable in all cases of ulceration of the os and cervix uteri from simple inflammation. From the various and important statistical documents read to the Society, it was conclusively proved that, in 3000 uteri, carefully examined after death by pathologists of established reputation, scarcely an example of simple inflammatory ulcer of the os and cervix uteri was met with. If simple ulceration of these parts existed in many cases during life, it could not fail to have been very often seen in so many uteri taken from the bodies of women of all ages, who had died from accidents, and acute and chronic diseases. Dr. Murphy had said elsewhere that ulcers of the os and

cervix uteri might exist during life, and disappear, or become invisible, after death. He (Dr. Lee) now asked, was this the case with ulcers of the mucous membrane of the stomach, bowels, or any of the other viscera, or even with the uterus itself, when it has been actually ulcerated from any specific cause? The very reverse of this was known to be the fact, and it was impossible to believe that, if simple inflammatory ulcers of the uterus were so common as had been represented, they should be invisible in the dead. But the truth was, they did not exist in the living, and therefore they could not be seen in the dead body. In the whole course of his professional life, he had never seen a distinct simple inflammatory ulcer in the living subject, although he had very frequently employed the speculum since 1827; in fact, in all cases where he could not form a decided opinion of the disease by the ordinary mode of examination, and where he thought the sense of sight would assist in the diagnosis. He held it to be wrong, on every ground, in any case, to employ the speculum where the nature of the disease could be clearly determined by the sense of touch. It had been asserted, that evening, that he had denounced the speculum in all cases; but those who had done so could not have listened to the paper when it was read, otherwise they must have heard that his (Dr. Lee's) object in the communication to the Society was to define and make known its legitimate use and real value in practice. It was equally erroneous to assert, as had been done, that caustic and all escharotics, of every kind, to the os uteri, had been denounced by him. He (Dr. Lee) then stated that sixteen years ago he had described in the *Cyclopaedia of Practical Medicine*, under the title 'Inflammation of the Follicles of the Os Uteri,' the disease which was now erroneously called ulceration of the os and cervix. In the article in question, reference was made to the work of Madame Boivin, who had before described the disease under the title 'Granular Inflammation of the Os Uteri.' He (Dr. Lee) said he had not described simple inflammatory ulceration of the os and cervix uteri, because he had never seen it, and he believed it rarely, if ever, occurred, and that the profession in this country had been grievously misled by Dr. Bennet on the subject. There was no end to the cases now coming under his (Dr. Lee's) observation, especially in young and hysterical women, where the speculum and caustic had been employed for months, and where there was no ulceration, and where no ulceration or any other organic disease ever had existed. He even believed that Dr. Bennet himself had never seen simple ulceration of the os and cervix uteri, although he was now disposed to take so much credit for having been the first to describe what he erroneously supposed had escaped the observation of all preceding pathologists. He (Dr. Lee) formed this opinion from Dr. Bennet's own published description of these supposed ulcers of the os and cervix uteri, which he would now read to the Society, and was as follows: 'The margin of an inflammatory ulcer is scarcely ever, if ever, either everted or inverted. . . . So much is this the case, that it is generally most difficult to say where the ulceration finishes, until, by the application of the nitrate of silver, the margin of the sore, or point where the epithelium finishes, be revealed. . . . It is always on a level with or above the non-ulcerated tissues that limit it; its margin never presents an abrupt induration. Owing to this circumstance, it is always impossible to determine by the touch the precise point at which the ulceration terminates.' Dr. Bennet did not know; he merely asserted that the epithelium finished at the edge of the imaginary ulcer. Was he certain that the epithelium did not remain, and by a state of morbid thickening give rise to the appearance of an ulcer 'which,' he said, 'is always on a level with or above the non-ulcerated tissues that limit it?' Undoubtedly, the mucous membrane in most of these cases was unusually vascular and thickened; and he (Dr. Lee) should not be surprised if it were to be found that the epithelium was present and thickened also. What would be thought (said Dr. Lee) if a surgeon could not tell whether an ulcer existed on any organ of the body without the application of such a test?—who would say to his patient, 'Let me first rub the part with lunar caustic, and then I will tell you whether an ulcer exists or not?' Dr. Bennet's ulcer could not be recognized by the sense of touch, for it had no margin inverted or everted; it could not be seen through the specu-

lum till the part had been rubbed with the nitrate of silver. It had neither centre nor circumference, beginning nor end.

"Dr. Lee here sat down amidst the most enthusiastic cheering of the whole assembly. He afterwards rose and made some severe remarks to the Society on the instruments called Simpson's uterine sound and stem pessaries."—*Lancet*, June 8th, 1850.

53. *On Engorgement and Deviations of the Uterus*.—M. DUBOIS, in the recent discussion in the French Academy relative to this question, observed that great discrepancy of opinion prevails as to whether *anteversion* or *retroversion* is of more frequent occurrence; and from the attention he paid some time since to this question, he believes that perhaps there have occurred to him rather more cases of the latter than of the former. Confusion, too, has resulted from employing the terms *inflexion* and *deviation*, as if they were synonymous. The uterus may be bent upon itself without any change in its direction taking place, and *vice versâ*, although the two conditions may in certain cases be combined. Well-marked inflexion is usually congenital, existing in common with a series of other alterations; while deviation is generally accidental. Nevertheless, an inflexion may occasionally be acquired, and even be produced, as a consequence of excessive deviation, being here, however, a mere secondary phenomenon. In true inflexion, the volume of the uterus is often less than normal, but the walls retain a proper density; while in deviation, followed by incurvation, the volume is often increased, the density diminished, and the sensibility augmented. Inflexions do not of themselves seem to induce any ill effects upon the general health; but by the obstruction of the menstrual flux to which they give rise, they frequently cause dysmenorrhœa. Even deviations and displacements, contrary to the general opinion, when not in excess, which they commonly are not, are almost harmless, unless the uterus itself, or the parts it comes in contact with, are the seats of inflammatory action. Long observation has convinced M. Dubois that deviations of the womb are of such very frequent occurrence that, if they ordinarily led to the consequences they are said to do, and the means usually recommended for the prevention of these were had recourse to, a third part of the inhabitants of the towns would be obliged to resort to the employment of such, or resign themselves to a hopeless sterility.

Moreover, he denies the agency of *engorgement* in the production of deviations, for, if it were as operative as supposed, there could be scarcely a case of early pregnancy without deviation being produced. *Engorgement* is, in fact, not a primary circumstance, but an epiphenomenon manifesting itself in the uterine just as in any other tissue, which has been the seat of phlegmasia: especially when that phlegmasia, as in the case of the uterus, the amygdalæ, the testis or ovary, is very liable to reproduction. So, too, with regard to *simple* or *granular erosions*, to which Velpeau and others attach so much importance, they are phenomena consecutive upon a prior diseased state, and both as regards symptomatology and treatment are only of secondary importance. In the great majority of cases, they have succeeded, not preceded, the mucous and purulent discharges of uterine affections attributed to their agency, and their artificial removal is not followed by a cessation of these.

M. Dubois regards a *uterine phlegmasia*, and generally a *catarrhal phlegmasia*, as the essential and primary pathological element in the great majority of uterine affections. But, although originating there, the phlegmasia does not in some cases continue confined to the mucous membrane, but may involve the parenchymatous structure to a greater or less extent; and although whether superficial or deep-seated, it is usually confined to the cervix, yet occasionally it attacks the body of the organ, and gives rise to more or less *engorgement* of it also. In almost all cases, too, this uterine phlegmasia is produced by the operation of local causes, among which may be especially mentioned abortion, difficult labour, insufficient repose after delivery, imprudences committed during the menstrual period, and immoderate sexual intercourse. But while making the foregoing statement, it is not intended to deny that there are uterine affections quite unattended with inflammation, which may yet give rise to many

of the functional disturbances usually dependent upon it; and, indeed, Lisfranc, as well as most other pathologists, has admitted the existence of neuralgia of this organ.

The *treatment of chronic uterine phlegmasia* was, some time since, based upon the belief of its tendency to induce a cancerous degeneration of the organ; and this it was which led Lisfranc to regard the epiphenomenon of uterine *engorgement* as the dominant and capital element of uterine disease, the removal of which was the primary object of treatment. At present, it is believed that such degeneration only takes place in the predisposed, the phlegmasia merely rendering this organ the elective seat of its manifestation in such.

Although this phlegmasia may sometimes disappear under the influence of mere rest and appropriate hygiene, yet of all forms of chronic phlegmasia it is, perhaps, the one most prone to become perpetuated when left to itself. This arises, on the one hand, from the limited amount of vitality with which the uterus is endowed, excluding those internal organic movements which in other organs may quickly resolve pathological phenomena; and on the other, from its frequent exposure to accidental or periodical excitement.

An important question presents itself as to whether the treatment should be entirely general, as recommended by MM. Baud and Gibert, or essentially local, as insisted upon by all the other speakers. It is rare for a phlegmasia to continue for several months without inducing a derangement of the general health, which, again reacting on the local malady, renders its cure more slow and difficult; and, therefore, while in some exceptional cases local treatment may effect a durable cure, and in others general treatment will suffice, yet, in the great majority, it is to an association of the two means we must look—the relative importance of the one or the other varying with the temperament, mode of life, state of the disease, and other circumstances. In this last point of view, a great difference will be found between hospital and private patients; the habits and education of the latter having impressed upon the symptomatology of their uterine affections a particular character of nervous predominance, rendering their cure more difficult, and a resort to general means more urgent. If local medication, too, is applicable when the uterine lesions are evidently dependent upon a general derangement of health, it is especially called for in those numerous cases in which this is not primarily present. When uterine affections have been prolonged, a disturbed state of the genital and digestive organs and of the nervous system is produced, manifesting itself by a semi-chlorotic condition, great impressionability to erratic pains, and a remarkable degree of emaciation and debility. A tonic and antispasmodic medication is here obviously indicated; while long-continued repose in the horizontal posture, so insisted upon by Lisfranc and his followers, should, unless severe suffering be present, be exchanged for active exercise, pursued, however, with discretion.

M. Gibert and others object to the use of *caustics* in the *local* treatment of this affection, as being useless and dangerous; but this arises from a want of consideration of the nature of the substances employed, and the pathological conditions requiring them. The irritation produced is superficial, the vitality of the tissues is low and their tolerance great, while the phlegmasia is of that chronic character requiring modification for the purpose of stimulating into activity the organic movements necessary for a cure. This cure by their agency is usually slow, but assured; and their employment is one of the numerous examples of the success with which a more active phlegmasia may be substituted for a chronic one.

As regards the treatment of *deviations*, M. Dubois is of opinion that *inflexions* are almost always incurable, but that they give rise, however, to little inconvenience, if not existing in an aggravated degree. Even *displacements* of the organ, when not in excess, and not complicated with phlegmasia, do not produce the symptoms so generally attributed to them. A sense of weight in the pelvis, that of a body tending to pass the vulva, or of a bearing down at the fundament, are not pathognomonic of uterine displacement, but are found daily in cases of uterine phlegmasia, quite unattended with this, especially when the phlegmasia assumes a subacute form. We can, by pressure upon the inflamed cervix with the finger, at any time give rise to these sensations at will. When

displacement of the uterus, therefore, does not exist in an excessive degree, pessaries, and similar means, so commonly resorted to, are not only useless, but injurious. It is indeed for considerable *prolapsus uteri* alone that M. Dubois resorts to a pessary, employing then an ivory one. As he considers it essential for the patient's welfare that she should be able to remove it every night and replace it every morning, it should not be sufficiently large to remain within the genital passage without external support, and he has contrived an ingenious form of applying this. In prolapsus, pressure from below will completely maintain the uterus in its normal position; but this is not the case with respect to *anteversion* and *retroversion* of the organ, in which, therefore, he never employs the pessary; but when they exist in excess, resorts to a modification of Hull's abdominal bandage. It is true that this does not correct the displacement; but, by removing the weight of the superincumbent viscera in the erect position, it may prevent its increase. By the same agency the employment of this bandage proves of great utility in uterine phlegmasia, enabling the patient to take an amount of exercise so conducive to her recovery, which she otherwise often could not.—*Brit. and For. Med.-Chirurg. Rev.*, July, 1850, from *Gazette Médicale*, Nov. 4, 1850.

54. *On the Application of Ligatures to Uterine and other Polypi.*—Prof. LANGENBECK, of Berlin, in an interesting paper on this subject in the *Deutsche Klinik*, remarks: The numerous instruments which have been contrived for ligature of polypi of the uterus and pharynx, show the great apprehension of hemorrhage from their excision or evulsion. Even the assurances of Siebold, Dupuytren, and other distinguished surgeons, that there is no greater danger of hemorrhage from the excision of polypi than from other operative methods, have not removed this apprehension; and the ligature of uterine polypi is rapidly gaining ground, in spite of the difficulty of its performance. It is true that the excision of large fibrous tumours from the pharynx and uterus may be complicated with considerable hemorrhage; but this generally ceases of itself when the operation is ended, or may be quickly and surely restrained by the continued injection of cold water, by compression with the finger, or, in the most obstinate cases, by plugging. The cases in which actual danger arises from the patient becoming exhausted by hemorrhage through the cut pedicle of the tumour are very rare. But the dangers attending on ligature of the polypi are far greater; and this operation would certainly be had recourse to only in exceptional cases, if the fatal cases following it were not less apparent than those from the much-dreaded hemorrhage. A death occurring some days or weeks after a bloodless operation seems less terrible than one occurring suddenly from hemorrhage under the hands of the operator. The danger of purulent infection, after the application of a ligature to uterine polypi, is so obvious that I have not yet been able to determine on performing this operation. During the last ten years, there have occurred to myself alone ten fatal cases of pyæmia after ligature of polypi. The larger polypous (fibroid) tumours of the uterus and pharynx are furnished with large veins with thin parietes, doubtless arising from the impediment to the return of blood caused by the dependent position, or constriction by the os tincæ, of the tumour. As the firm parenchyma of these tumours can only be slowly cut through by a ligature, the blood must still circulate in one part, while another is in a sloughed and softened state. As long as the pedicle is not entirely cut through by the ligature, pyæmia is to be feared. Entirely independent then of the danger of convulsions, suffocation (in polypi of the pharynx), secondary hemorrhage, etc., the application of the ligature ought to be entirely rejected on account of the danger of pyæmia. But if it be still determined, in spite of the marked success attending the excision of polypi, and in opposition to which scarcely a single case of unrestrainable hemorrhage can be related, to apply a ligature, I consider it indispensable that the polypus should be immediately excised, that the ligature should be used only as a precautionary measure, and that it should be removed as soon as the danger of hemorrhage appears to have been obviated.

It is not my purpose to enter on a critical examination of the various methods

and instruments employed in applying the ligature to uterine polypi, as, for the most part, they possess only a historical interest. With very few exceptions, they are all faulty in being difficult of application, in tending to produce violent irritation of the neighbouring parts, and in the ligature being unable to be removed until the pedicle of the tumour is entirely divided.—*Lond. Journ. Med.*, July, 1850.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

55. *Ethereal Oil of Bitter Almonds.* By Prof. MITSCHERLICH.—Owing to the difficulty of entirely freeing this substance from Prussic acid, physiological experiments hitherto performed with it have given very different results. M. Mitscherlich has recently undertaken a series on rabbits, which confirm the observations of those inquirers who state that its dangerous effects are proportionate to the amount of Prussic acid which still continues combined with it, and that, when freed from this, and given in doses in which the unfreed oil quickly kills, it scarcely excites any more powerfully poisonous effects than do the other essential oils. The conclusions are:—

1. Bitter-almond oil is a poison in large doses. It acts more feebly than ethereal mustard oil, but more strongly than the ethereal oils of savine, cinnamon, nutmeg, fennel, turpentine, juniper, or balsam of copaiba. 2. It is re-absorbed in the stomach, and in part excreted by the kidneys and lungs. Given in small doses, it may, according to the experiments of Wöhler and Frerichs, be oxidized in the economy, and converted into hippuric acid. In larger doses, the oxidation is incomplete, and a portion of the unchanged oil is found in the urine and expired air. 3. The most remarkable effects which fatal doses produce are, the rapid annihilation of voluntary motion and sensation; the respiratory movements and action of the heart; both of which are accelerated by this poison still continuing. 4. It produces the same changes in the intestinal canal as the other ethereal oils do. 5. When not freed from Prussic acid, it acts almost entirely by reason of its presence. The pure oil, given in doses of a scruple, does not produce any essential symptoms, but in larger doses it acts as the other ethereal oils.

The fact of this oil being employed in the manufacture of confectionery and perfumery invests these conclusions with a practical importance.—*Brit. and For. Med.-Chir. Rev.*, July, 1850, from *Buchner's Rep.*

56. *Poisonous Effects from Zinc.*—It is now some time since it was proposed by M. Leclaire to use oxide of zinc as a substitute for white lead, with a view to avoiding the dangerous effects of the latter on the workmen. There could be little doubt that, in point of salubrity, oxide of zinc was an improvement on carbonate of lead; but it was still a matter worth determining to what extent the oxide of zinc was itself free from objection, and whether or not some precautions were necessary regarding its use.

M. FLANDIN endeavoured to determine this experimentally. He rubbed animals over with ointments of oxide of zinc, of carbonate of lead, and sulphate of lead; and whilst he found that the two last always produced poisonous effects, he observed that the animals rubbed over with the oxide of zinc continued to enjoy their usual health. The following facts, however, show that the innocuousness of oxide of zinc must not be admitted so decidedly as Flandin supposes.

I. *Poisoning by Oxide of Zinc, used as a substitute for White Lead.* By Dr. BOUVIER, of the Hôpital Beaujon. A man, aged forty-two, a labourer, entered on 19th April with all the symptoms of metallic colic. He had been employed for the fifteen previous days at a white colour manufactory, along with five other workmen, in barreling oxide of zinc, and in repairing casks which had contained that substance, during which operation they were exposed to an atmosphere loaded with the powder of the oxide. From the commencement of their work, he and his comrades experienced colic and a repugnance to food;

and the wine and brandy which they took to excite their appetite were disgusting to them, and did not remove the clammy taste which they had constantly in their mouths. This man could not continue long at work. After ten days of this employment, he was seized with vomiting, severe colic, accompanied by constipation, which persisted and increased in intensity so much that he rolled on the floor in agony. On the day of admission, he continued to vomit, and to suffer severe abdominal pain. The vomited matters were bilious, and he rejected all his food almost immediately after swallowing it; he had had no stool for five days; the belly otherwise was natural, the tongue whitish; he had no appetite, was free from fever, but was sleepless. The next day, 20th April, the bowels were opened by two ounces of sulphate of magnesia, and the painter's purgative clyster, as used in La Charité—(this consists of twelve ounces of wine, with six of oil). The free evacuation of the bowels, and the administration of two and a half grains of opium, were followed by cessation of vomiting and diminution of the pain. From this time to 26th April, after having taken from six to twelve grains of gamboge daily, and using frequent clysters and medicated baths, he became convalescent, and was dismissed cured on 4th May.

From the whole history of the case, there appeared to be no doubt that this man suffered from a genuine zinc colic. To ascertain that it was really oxide of zinc which had caused the illness, M. Bouvier collected, by washing the surface of his body, the metallic particles which adhered to it, and found them to consist of oxide of zinc. We are not entitled from this to say that the oxide of zinc is as noxious as white lead; but it shows, at least, that some precautions require to be taken by those who work with it, in order to preserve their health.—*Compte Rendu de l'Académie des Sciences*, May, 1850, in *Bulletin de Thérapeutique*.

II. *Zinc Poisoning observed in the Workmen employed in twisting Galvanized Wire.* By MM. LANDOUZY and MAUMENE, of Rheims. The iron wire employed for securing the corks of champagne is sent in bundles of one to ten kilogrammes to workmen called *tordeurs*, who, by a dextrous manœuvre, cut and twist from ten to twenty threads of wire at a time. These wires are then made up in packets of one kilogramme, and, after being beaten with a bit of wood to make them even, are packed in bundles. Although this sort of work had been followed by the same workmen from eight to fifteen years under very bad hygienic circumstances as regards ventilation, they never had experienced any evil effects from it till the beginning of January, 1850, when the so-called galvanized wire (which is iron wire covered with a layer of zinc) was substituted for the common iron wire; and, soon after, the workmen began to complain of the taste as of a sweetish powder in the throat, an incessant tendency to cough and spit, shiverings, and general malaise. The whole of the people employed in this branch of industry—two youths, two women, and two men—were affected with symptoms which were referable to zinc. Four had symptoms of general depression, with sore throat, swelling and ulceration of the tonsils, inflammation of the palate, white pellicles on the gums, salivation, fetid breath, colic, and diarrhoea. In one, the colic and diarrhoea were the only symptoms observed; in another, the colic was accompanied by nausea, tenesmus, and obstinate constipation. The wires with which they worked had been made hurriedly and carelessly, and were covered with a dusty powder, which escaped abundantly during the twisting, and especially the beating, of the wires. This powder consisted of zinc, oxide and carbonate of zinc, alloy of zinc and iron, iron, and oxide of iron. It contained no trace of lead.

These symptoms seem to have subsided readily, without treatment, on abandoning the occupation. With one exception, all the work-people returned to their work in from three to six days.

That the symptoms were due to the exposure to the dust appears from the circumstance that, in fifteen days more, the same work-people, in the same hygienic circumstances, resumed the same work, with the same galvanized iron, but free from all dust, and none of these phenomena manifested themselves which were formerly observed.—*Monthly Journ.*, Aug. 1850, from *Gaz. Méd. de Paris*, 1st June, 1850.

57. *Case of Fatal Poisoning by Sir William Burnett's Fluid.* Reported by H. LETHEBY, M. B. (*Proceedings of Royal Med.-Chirurg. Soc.*, June 11th, 1850.)—The author commenced by expressing his belief that no fatal case of poisoning by chloride of zinc is on record—a remarkable fact, as the very commonly employed deodorizing fluid referred to is a strong solution of this poisonous salt. It will be found that the writings of the leading toxicologists, English and French, contain no mention of this salt as a possible source of danger to the community. The case related is that of a little girl, aged fifteen months, at Reddingfield, in Suffolk. Mr. Miller, of Eye, in the same county, was called to her on the 16th of August, 1849. She was in a semi-comatose state, the vital powers being much prostrated, the countenance pale and anxious, the breathing thoracic and rapid, the pulse quick and fluttering, and the general surface of the body cold, and bedewed with perspiration. The swelling of the lips, and the thick transparent mucus adhering to them, led to further examination, and the lining membrane of the mouth was found to have the appearance of having undergone the action of a corrosive substance. The child had been well in the morning, and only an hour and a half before Mr. Miller saw her, had been seized with most violent sickness. A bottle of Sir William Burnett's fluid had been supplied to the mother some days previously, in consequence of some cases of fever in the house she inhabited. On rousing the child, it craved for cold water, which evidently refreshed its mouth; but little, if any, could be swallowed, and it was partly returned by the nostrils. The throat was evidently swollen and painful. No relief could be given; vomiting of a frothy liquid took place at intervals, but the coma became deeper, the respiration slower, the pulse more feeble, and, ten hours after the symptoms had commenced, the child died. The body was examined twenty-two hours after death. Marks of the corrosive poison were found on the lips, lining membrane of the mouth, fauces, and œsophagus, which were white and opaque. The outer surface of the stomach had a mottled appearance, from ramifications of dark purple vessels; the intestines looked paler than natural. The stomach felt hard and leathery, and contained an ounce and a half of a fluid resembling curds and whey. Its inner surface was corrugated, opaque, and tinged of a dark leaden hue: this appearance ceased abruptly at the pylorus. The lungs were slightly congested; the auricles of the heart full of dark, semi-fluid coagula; the ventricles empty. The kidneys were much congested. The interior of the stomach was slightly acid to litmus paper, and, on digesting the organ in one ounce of distilled water, the liquid obtained gave white precipitates with prussiate of potash, carbonate of soda, sulphuretted hydrogen, and acid nitrate of silver, no precipitate being obtained on the addition of a soluble salt of baryta. The presence of chloride of zinc was thus demonstrated. The fluid matter taken from the stomach, and that ejected by vomiting, on being filtered and tested, gave the same reaction. The tissue of the stomach was then broken up with nitro-muriatic acid, the solution evaporated to dryness, re-dissolved in distilled water, filtered, and precipitated with sulphuretted hydrogen, by which means 3.8 grains of sulphuret of zinc were obtained, a quantity equal to 3.2 grains of the oxide, and 5.4 of the chloride of the metal. The fluid in the possession of the mother had a density of 1600, was slightly acid, and contained fifty-two per cent. of the solid chloride. Experiments made with this liquid, in order to determine its leading chemical and physiological characters, showed—1st. That the chloride of zinc is distinguished from the other salts of the metal by its quick and firm coagulating action on liquid albumen and on the delicate tissues of the body. 2dly. That a solution of chloride of zinc exerts a twofold action on the living animal economy. Its first effect is that of an irritant and caustic; the liquid coagulates the tissues, and gives pain in the part to which it is applied, and almost instantaneous vomiting. It appears, moreover, from the investigations of Orfila, that the salts of zinc act upon the stomach, not only when they are introduced into this organ, but also when they are injected into the blood-vessels of the body, or applied to a wounded surface. The second effects are of a constitutional nature; and it would appear that the poison exerts a distinct and specific action on the motor and organic system of nerves, for, soon after the poison gains access to

the circulation, the breathing and pulse become accelerated, paralysis of the voluntary muscles commences, the surface of the body grows cold, the pupil is dilated; the circulation and respiration become more and more affected, and lastly the brain suffers, coma supervenes, and death takes place without a struggle. The author stated, moreover, that his experiments prove the poison to be absorbed from the alimentary canal, and carried into the general circulation. He has detected the metal in the blood removed from the heart, in the tissues of the body, and in the urine excreted during life. The appearances presented by the blood indicate that the poison exerts some peculiar action on this fluid, which is found black and uncoagulated, and the cavities of the heart are distended as if the organ had lost the power of contracting on its contents.

Mr. Ure said that the chloride of zinc had been found of much service in surgery. He had used it pretty extensively, and some years since had pointed out its remarkable affinity for albumen. In his practice, no symptoms indicative of its absorption into the system had been manifested. He agreed with the author of the paper respecting the action of sulphate of zinc on the economy.

Dr. Letheby remarked that his experiments went to confirm the observations made by Mr. Ure as to the great insolubility of the coagulum formed by albumen and the chloride of zinc. He had observed, for instance, that when an albuminous tissue, as the stomach of an animal, had been acted upon by this agent, and was afterwards steeped in water for a length of time, it would neither dissolve nor decompose, nor even yield up the bulk of the salt with which it was in combination. This was evidence of the great affinity of this compound for albumen. He considered that the chloride of zinc might generally be used as a caustic, with little fear of its entering the circulation, or of producing effects on the general system. His investigations, however, had shown that when given internally the poison invariably found its way into the circulation. In the cases before the Society, he had been able to detect the metal, not only in the animal tissues, and in the blood taken from the heart, but also in the urine voided by the animal during its lifetime.—*Lancet*, July 6, 1850.

AMERICAN INTELLIGENCE.

ORIGINAL COMMUNICATIONS.

Cases of Asthma successfully treated by Nitric Acid. By T. S. HOPKINS, M.D., of Bethel, Glynn county, Georgia.—The following five cases of asthma, cured by the use of nitric acid, have occurred in my practice since the summer of 1847. It is not my desire to attempt any explanation as to the *modus operandi* of this remedy in the above disease. Its beneficial effects were accidentally discovered, and, after a fair trial in five consecutive cases, with the most entire success, I am induced to bring it to the notice of the profession, trusting that in other hands than my own it may prove a potent agent for the relief of a disease which so often resists the best-directed treatment. Several of these cases were from twenty-five to thirty-five miles distant from my office. Most of them were not seen by me from the time of my first visit and prescription until a cure had been effected. I describe them as I found them at the time of my visit, and from the history given by parents and masters, which I think can be depended upon.

CASE I.—Emma, negro girl, aged five years, belonging to Mr. T. G., had been asthmatic *almost* from birth. Nightly paroxysms of dyspnoea, cough, &c., were represented as most distressing. During the day, she would be up and about the yard with the other children. At the time that I saw her, her respiration was somewhat embarrassed, with slight elevation of the shoulders during inspiration, and a very distinct mucous r le. Her appetite was impaired, and her countenance cheerless.

I ordered nitric acid, three drops, to be increased to five, three times daily, in a wineglassful of sugared water. A month elapsed before I again saw this patient, at which time every symptom of disease had disappeared. I prescribed for her in December, 1847, and up to date no symptom of asthma has returned.

CASE II.—I was called in November, 1848, to see W. S., aged about six years, son of a planter of Glynn county. I was informed that this boy had been a subject of asthma for four or five years; that no expense had been spared in seeking for relief in his case; and that all the efforts of the best physicians in the neighbourhood in which he had resided, had been in vain. When I saw him, he had cough, slight dyspnoea, with mucous r le distinctly audible at the distance of several feet. By walking up and down the steps of the house, once or twice, the difficulty of breathing and cough would be much increased. He was very lively and cheerful, with a good appetite, and had had no fever for months. His father informed me that, upon the least *exposure* during the day, he would be attacked at night with the most fearful symptoms. Wheezing, panting, incessant cough, distressing dyspnoea, with impending suffocation, were the inevitable consequences (at night) of exposure during the day.

I ordered nitric acid, five drops, three times daily, in a wineglass of sugared water, with a strict avoidance of exposure.

In a fortnight, he had been so much relieved that his parents imagined him cured, and discontinued the acid. In a few days, he relapsed, and I was again sent for. I ordered the acid to be continued, as before, and in one month from the time of my first visit he was *cured*.

Up to date there has been no return of disease.

This boy's father died of phthisis pulmonalis. Several of his mother's family have died of the same disease; and all of *his* brothers and sisters, without an exception, have in early childhood been sufferers from enlargement of tonsils and ulcerated sore throat. He is now the picture of health.

CASE III.—A mulatto girl, belonging to Mr. W. D. T., aged four years. This was a case of congenital asthma.

The symptoms in this and the following case (aged about four years) were so similar to those of Case I. that I shall not describe them.

The treatment was nitric acid, three drops three times daily, in a wineglass of sugared water.

This case resisted the treatment rather longer than the other cases, but was *cured* in about six weeks.

In Case IV., the immediate effects of the acid were perceived in a few days; and in eight or ten days she was cured.

CASE V.—I never saw. It was a negro girl belonging to Mr. C. of Camden county. She was seven years of age. Her master applied to me for a prescription, after giving some of the most prominent symptoms, which convinced me that the case was asthma, as he had declared it to be.

I prescribed five drops of nitric acid, three times daily.

I heard nothing more of this case for several months after I had prescribed, when I was informed by her master that she was well.

A sufficient time has elapsed, in all these cases, to convince me that they have been radically cured.

Should you deem the above remarks and cases worthy a place in your valuable journal, you will please to insert them. It is at least something *new* in the treatment of asthma.

Power of Lupulin in allaying Irritation of the Genital Organs. By GEO. J. ZIEGLER, M. D. of Phila.—Being obliged to resort to a prolonged use of tonics, I took the combination of iron, sulphate of quinia, and lupulin. After some time had elapsed, I believed that the indication for which I took lupulin was fulfilled. I therefore omitted it, still continuing the use of the iron and the quinia, $\frac{1}{2}$ grain of the latter three times a day. In a few days, I began to experience symptoms of irritation of the bladder and urethra, with pain at the extremity of the penis and frequent desire for micturition, somewhat similar to those resulting from calculus. These symptoms increased, and in two or three weeks became so violent and constant as to give me no peace. The thought then occurred that they might result from something I was taking, and my mind reverted to the possibility of their proceeding from the quinia. This idea was confirmed by the opinion of a medical friend. As the symptoms did not appear during the use of the combination of lupulin with the other remedies, we concluded that it would be better to recombine them. This was done, and with the happiest effect. The feelings of distress began immediately to subside, and in a few weeks entirely disappeared; and although I have continued the use of the above-mentioned remedies for months since, I have had no further symptoms of the kind.

Thus, my own experience confirms the favourable opinion expressed by Dr. B. Page of the effects of lupulin in quieting the excitement of the genital organs, and induces me to suggest *its combination with the other remedies which generally produce irritation of these organs*, and likewise for the *prevention of strangury from cantharides, &c.* Indeed, I would recommend its employment *in all irritating and inflammatory affections of the urinary and genital organs; those from calculi, polypi, uterine and vaginal irritations, &c., particularly.*

The fact that I have not seen in any of the works on materia medica and therapeutics any notice of such effects resulting from the use of sulphate of quinia, will, I hope, be considered sufficient excuse for this brief notice.

Spina Bifida—Spontaneous Rupture of Sac.—Complete Cure. By W. H. NANCE, M. D., of Vermont, Ill.

The subject of the case in question was a young girl about thirteen years old; her mother informed me that, at birth, the tumour was about the size of the "end of the thumb," and could be easily pressed into the spinal canal. The tumour was situated at the juncture of the lumbar vertebræ with the sacrum, and, at the time I saw it, was as large or larger than a quart measure. It was of an oblong oval shape, had a neck an inch and a half or two inches in diameter, and made a prominence quite perceivable through all her clothing. The mother informed me that she had consulted (in the State of Ohio) several eminent physicians, when the child was small, and all advised her to have nothing done for it, as the child would not live long, and that anything that might be done would only hasten death. The child, however, continued to grow, was rather delicate, but had the proper use of all her limbs, the tumour increasing in size with her growth, until she was thirteen years old.

In February, 1848, almost all the family were afflicted with measles, and among the rest was the girl in question; she had it pretty severely, and the eruption was profuse all over her body. About the time the eruption began to decline and desquamation came on, the pendent point of the tumour began to get sore, and turn of a darkish colour, brought about, doubtless, by the exanthematous eruption acting on the part in its low state of vitality. The skin soon began to slough, and as soon as that took place, the water found its way through the textures beneath, and dribbled away continually. At this period, I was first called to the case, and found the tumour, as above stated, exquisitely tender to the touch, and constantly discharging a straw-coloured water which percolated the remaining textures of the tumour, and came away in enormous quantities, so much so that her bedding had to be changed very often. Sheets, blankets, &c., that were laid about her, would soon have to be removed for new ones, being thoroughly wet with the water. When placed in an erect posture for a short time, the liquid would pass away in quick successive drops. It would be hard to compute the amount which passed off in the course of five or six days, but it was perhaps without parallel. I found the patient very weak; muscles shrunken; extremities cool and of a purplish cast; pulse quick, weak, and fluttering; countenance dull, and expressive of much suffering, with a partial loss of the use of the inferior extremities. These symptoms were dependent, doubtless, on the great loss of the fluids of the body, through a morbidly increased action of the serous membrane lining the spinal canal, and produced a condition somewhat analogous to that caused by hemorrhage, or like that from the excessive serous discharges in epidemic

cholera. The symptoms strongly indicated speedy dissolution; I had but little expectation of saving the patient. I ordered her to take strong brandy in large doses, often repeated, until the skin became warmer and the pulse raised, unless it produced signs of intoxication; gave astringents also from time to time; had the extremities rubbed frequently, and wrapped in warm clothes, and applied a soothing poultice to the painful tumour. I knew that the tumour would burst soon, and as nature had commenced the operation, I concluded to support the system and let her do her work. On my next visit (the following day, I believe), I found the sac empty, its walls all collapsed into folds, hanging loosely down; in an effort to cough, it had given way and the contents had gushed out. General symptoms much as they were on the previous visit; discharge pretty considerable, perhaps a little abated; folds of sac very painful, look dark and inclined to gangrene at the inferior part, and emit a very offensive odour. Internal remedies to be continued with as much nourishing food as the patient will eat; bowels to be moved with castor oil if needed. Cloths were applied to the tumour wet with the liquid chloride of soda as strong as can be borne, to be repeated so as to keep the part entirely wet. On my next visit, I found my patient better, surface of body and limbs warmer and better colour, discharge from tumour less in quantity; offensive smell much abated, the dead parts sloughed off, and the living taking on a more healthy action.

My patient after this continued to mend. The discharge daily grew less in quantity and thicker in consistence, until it finally became purulent, and after a time ceased altogether. The remains of the sac gradually contracted, and was, I suppose, absorbed in part, until a hard semi-cartilaginous lump is left but little larger than a hulled walnut, which is not at all in the way, and serves the valuable purpose of completely protecting the spinal canal in the part where the deficiency of bone first produced the disease.

It has now been more than two years since the occurrence. The girl has grown to be a woman in size, has the proper use of all her limbs without any weakness of the back, has excellent health, and a fine ruddy complexion, and bids as fair for a long and happy life as other young persons.

DOMESTIC SUMMARY.

Case of Chronic Hydrocephalus.—Dr. WILLIAM PEPPER read before the Philadelphia College of Physicians, July 2d, 1850, the following account of a case of chronic hydrocephalus:—

A male child, aged five months, was brought to my office, May 9th, 1849, suffering with dropsy of the brain. The mother, a young married woman, had always enjoyed good health up to about three months before her confinement, when she met with a severe fall which required her to be under medical attendance for several weeks. In due time, she was confined, and had a perfectly natural labour. The child, at the time of birth, was apparently perfectly healthy, and its head was of the usual size. Three days after birth, however, the child commenced screaming, and so continued, with but short intermissions, for one month. From the end of the first month, convulsions set in, there being several fits every day, and these continued to occur during the entire second month. Up to this time, the child had also suffered with more or less fever. About the beginning of the third month, the head was observed to be somewhat enlarged, and it continued gradually to increase up to the time when the child was first brought to my office. The mother also stated that calomel,

blisters, and various other remedies had been tried in his case, but without any apparent benefit.

The child was evidently blind, and lay with the eyes half open, the balls being in constant motion; the pupils were natural in size, and sensitive to light. He appeared to be well developed, and could suck without difficulty; he, however, was exceedingly irritable, and continued to suffer with severe spasms, and at such times screamed violently. The bowels were perfectly regular, and the secretion of urine quite abundant; nor could anything like paralysis of the limbs be detected. Gently tapping the head gave rise to distinct fluctuation, as in cases of ordinary ascites; but no abnormal murmur or egophonic resonance of the voice could be detected by the most careful auscultation. The veins of the scalp were greatly distended, and, in fact, the whole physiognomy of the child was perfectly characteristic of the disease.

By careful measurement I found the head to measure, in circumference, twenty-three inches; from ear to ear, over vertex, thirteen inches; from nasal notch of os frontis to the base of the skull, over vertex, thirteen inches; from superior edge of one parietal bone to the other, six inches; and from the upper margin of os frontis to os occipitis, full eight inches.

The child did not again come under my observation until the second day of June, 1850, or more than one year from the time I was first consulted in the case. It was now about seventeen months old, and had attained a fair development for a child of that age. It was still perfectly blind, but appeared to have sufficient intelligence to recognize its mother's voice. The head had become enormously distended, and the spasms were more violent and frequent; but the child still appeared to have full use of its limbs; and, judging from the violence of its screams, it could not be considered as very feeble. At this time, the head presented the following dimensions: circumference, twenty-seven and a half inches; ear to ear, eighteen and a half inches; from nasal notch to base of skull, twenty-one inches; from parietal to parietal bone, eight inches; and from summit of os frontis to os occipitis, nine and a half inches; so that, by comparing these with the former admeasurements, it will be perceived that the following increase in the dimensions had taken place in a little more than one year: in circumference four and a half inches; ear to ear, five and a half inches; nasal notch to base of skull, eight inches; parietal to parietal bone, two inches; and from os frontis to os occipitis, one and a half inches; showing the greatest increase in an antero-posterior direction, and thus causing the forehead to overhang the face to a very considerable degree.

The child was brought to the Pennsylvania Hospital, June 4th, with the express view of having the operation of paracentesis performed. A candid exposition having been made to the mother of the numerous risks attendant upon such a procedure, and at the same time of the very slight prospect of a favourable result, she was still anxious that it should be performed, in the hope that at least some temporary relief to the child's sufferings might thus be obtained.

The operation was performed by Dr. Peace, June 6th. A small silver canula, armed with a grooved trocar, was introduced about one inch to the right of the longitudinal sinus, and half an inch from the superior margin of the os frontis. The removal of the trocar was followed by a jet of limpid serum, which continued to flow until about twenty ounces had been removed. During the operation, moderate pressure was maintained by the hands of the assistants, and after the withdrawal of the fluid, permanent compression was kept up by broad strips of adhesive plaster, so applied as to completely envelop the head. The puncture was dressed with a pledget of dry lint, lightly secured by a strip of adhesive plaster. Soon after the operation, the pulse appeared good, and the child took the breast with avidity; and in fact, no untoward symptom occurred up to June 10th, or fourth day after the operation; up to this time a considerable amount of serum continued to flow from the puncture; but it was now observed, that the child was more restless, with increased heat of the head, and more injection of the conjunctiva. The grinding of the teeth, and the spasmodic closure of the hands, to which it had been subject for many months, were now greatly increased; and at the same time it was noticed that the head

had become more tense. Towels wet with cold water were constantly applied to the head, and small portions of calomel and Dover's powder were directed; but on the morning of the 11th, I found that the child could not suck, and that it swallowed with great difficulty, so that only one of the calomel powders had been administered. On the 12th, the head was flaccid; no pulse could be felt at the wrist, and the child was evidently moribund. He expired the same evening, about six days after the operation.

The examination was made the following day, in the presence of Dr. J. F. Meigs and Dr. Levick. With the view of ascertaining the exact amount of fluid, the brain was punctured at its most dependent part, near the os occipitus, and about three pints of straw-coloured serum escaped from the orifice. The scalp was now dissected from the dura mater, and, finally, this membrane was carefully opened, so as not to injure the subjacent brain; upon inspection, however, it was ascertained that the brain, owing to the removal of a part of the fluid which had distended the ventricles, had receded from the dura mater, and was in a measure collapsed. Upon opening the hemispheres, they were found to be converted into mere sacs, the parietes of which in many parts were not more than one line in thickness, and so softened as to be lacerated by the slightest traction. About four pints of turbid serum still remained in the dilated ventricles; which, together with the three pints removed by puncture before commencing the dissection, and the one pint and four ounces removed at time of operation, made in all eight pints and four ounces.

The septum lucidum was exceedingly thin and lacerated, so as to allow a direct communication between the two ventricles; the laceration may, however, have occurred during the examination; and this is by no means improbable, when we remember the jelly-like consistence of the brain. The foramen of Monro was greatly dilated, so as to admit the end of the finger, and the fluid could thus readily have passed from one ventricle to the other, even had the septum remained imperforate during the life of the patient. The lining membrane of the ventricles was exceedingly thin and soft, and coated with a thin layer of gray puriform matter; a small yellow mass, about the size of a pin's head, adhered to the side of the right ventricle, and several similar bodies were found on the floor of the left ventricle, near its anterior part. The plexus choroides was very pallid, and the longitudinal sinus contained but little blood. The distinction between the cortical and medullary matter appeared to be entirely lost over those portions of the hemispheres where the distension was greatest; but at the posterior parts, where the parietes were nearly one-third of an inch thick, the difference between the gray and white matter was quite apparent. The corpus striatum and thalamus opticus of the right side appeared to be well developed and perfectly natural, whilst on the opposite side scarcely the rudiments of these bodies could be detected.

The pia mater throughout adhered firmly to the brain, and the convolutions of the hemispheres were almost entirely obliterated. The cerebellum, pons Varolii, medulla oblongata, and other portions of the base of the brain, were apparently healthy; though perhaps the cerebellum was somewhat softer than what is natural, even for early infancy. The commissure of the optic nerves was completely imbedded in soft lymph and puriform matter; and the same was true with regard to the other cerebral nerves, but to a much less extent.

Several points of ossification could be seen on the os frontis, and the orbital plates were forced down, diminishing the size of the orbits, and causing the eyes to protrude. The parietal bones were very thin and elastic, and at their free margins were, in fact, almost in a cartilaginous condition. The lungs and other organs could not be examined.

In making this communication to the college, I am fully aware that the case does not materially differ from numerous others on record. In our own city, at least, it is an exceedingly rare affection, and I have therefore thought it might prove interesting.

The first question of interest which presents itself in the present instance has reference to the congenital or acquired nature of the disease. Acute or chronic inflammation, the result of tubercle, or other mechanical cause, does occasionally give rise to effusion into the ventricles; yet it is hardly conceiv-

ble that, under such circumstances, life could be sufficiently prolonged to admit of any very considerable distension of the head, as in the above case. When we bear in mind that the mother, during her pregnancy, received a severe blow over the abdomen, it is not improbable that the fœtus may at the same time have sustained some injury, which ultimately gave rise to an increased effusion into the ventricles, and thus prevented the full development of the brain, as seen by the deficiency of the corpus striatum, and thalamus opticus of the right side. The mere facts that at time of birth the head was of natural size and perfectly well formed, and that the infant appeared well until several days after, are not to be received as conclusive proofs against the probability of any considerable amount of disease having existed prior to birth. The screaming and other symptoms of cerebral irritation, which so soon supervened, may be fairly ascribed to an increased irritation of the brain, induced by the numerous exciting causes to which the child was necessarily exposed after entering upon its new state of things.

The small yellow mass found on the side of the left, and on the floor of the right ventricle, bore some resemblance to tubercular matter; but it was exceedingly small in quantity, and may have been nothing but concrete pus. At all events, no granular tubercles were detected at the base of the brain, fissure of Sylvius, or other localities where such deposits are most commonly found. It should also be stated that both parents enjoyed good health, and were without any hereditary tendency to tubercular disease. Moreover, the labour was easy, and in all respects perfectly natural; so that the symptoms could not be ascribed to any injury sustained by the head during parturition. It has long been observed that illegitimate children are most liable to hydrocephalus; and it has been supposed that the tight lacing resorted to in such cases for concealment might form a sufficient cause for the imperfect development of the brain, which so frequently exists in this disease. But no such conditions pertained to the case under consideration; and we are therefore disposed to believe, not only that the disease was congenital, but that it was most probably induced by the injury received during pregnancy.

It is not always an easy matter to discriminate between internal and external hydrocephalus; and this difficulty was felt in the present case. When the effusion is into the ventricles, constituting hydrocephalus internus, it is most commonly congenital, and owing to a gradual increase of the fluid which naturally occupies the ventricles during foetal life. The degree of development which the head sometimes undergoes under these circumstances is truly wonderful. In the *Dictionnaire de Médecine*, allusion is made to a case reported by Willan, in which, at the age of two years, the circumference of the head measured fully twenty-nine inches, whilst from ear to ear, over the vertex, it was not less than nineteen inches. Meckel mentions the case of a foetal head aged seven months, the transverse diameter of which was sixteen inches.

On the other hand, in hydrocephalus externus, or when the effusion is into the sac of the arachnoid, the head seldom, if ever, attains the same degree of development; and it is this fact which best enables us to make a correct diagnosis as to the exact locality of the effusion. The distinction is an important one, since more may be hoped for from the operation of paracentesis in external hydrocephalus than in the other variety. In doubtful cases, we may sometimes be greatly aided in our diagnosis by carefully investigating the probable cause of the effusion; thus, while the internal form is generally owing to a mere arrest of development, or perverted nutrition, the external variety can very frequently be traced to blows inflicted during pregnancy, or after the birth of the child, or to the pressure resulting from laborious parturition. According to MM. Rilliet and Barthéz, hemorrhage into the arachnoid is not an unfrequent cause of external hydrocephalus. Tubercles may give rise to either variety; but under these circumstances the head seldom attains any very considerable size.

The next, and perhaps the most important question in connection with this case is whether the condition of the patient justified the operation. We are well aware of the fact that by many this operation is considered as cruel and unjustifiable under any circumstances; nor can it be doubted that most of the

reported successful cases are exceedingly unsatisfactory, owing to the very imperfect manner in which they have been narrated.

In the *London Medical Gazette*, vol. ii. for 1841-42, there is a very able and elaborate report upon this subject by Dr. Charles West, in which he clearly shows that, out of the sixty-three cases of this operation which he has carefully collected from different authors, not more than two out of seven terminated favourably. But by a rigid analysis of these cases, it is rendered highly probable that even this degree of success is far beyond a fair estimate. It is well known to the profession that Dr. Conquest has reported ten successful cases out of nineteen operations for this disease; but here again it is to be regretted that there is the same deficiency of detail as to the exact condition of the patients, and the particular circumstances under which the operations were performed. We cannot, therefore, receive such evidence as conclusive proof of the comparative safety of the operation.

When the effusion has commenced at a very early period of foetal life, the development of the brain must be more or less impeded, and it is therefore hardly probable that with such an imperfect organization of the nervous centre, life could be long protracted, even supposing that the enlarged head could be safely delivered. Much less would it be possible for such a being to be susceptible of any considerable degree of intellectual development. And yet it is well known that children born with copious effusion into the ventricles have lived for many years, and even attained a fair degree of mental development, notwithstanding the great and gradual increase in the size of the head. In such cases, the probabilities are that the effusion only commenced at a late period of foetal life, and when the brain had already attained a more perfect organization; the effusion then must also have been very gradual, so as to cause the hemispheres to be slowly unfolded, and thus prevent any injurious pressure upon the brain. Such most probably was the condition of the brain in the case alluded to by Dr. C. West, where, with a tolerable amount of bodily and mental activity, life was prolonged for twenty-nine years. Goelis mentions an instance where life was protracted even to the advanced age of seventy-nine years.

From the above statements, it is evident that the mere existence of hydrocephalus is no certain proof that idiocy and premature death must be the inevitable result; and it is therefore fair to conclude that, when the functions of the brain are not materially impaired, it would not be justifiable to resort to a dangerous operation, with the mere view of relieving the patient from the inconvenience attendant upon the increased weight of the head. When the functions are very seriously impaired, owing either to an arrest of development or disorganization of the brain from a rapid effusion, nothing but temporary relief can be anticipated from the withdrawal of the fluid.

In the present case, it is true that the body was well developed; and that the child had a certain degree of intelligence is quite manifest from the fact of its recognizing its mother's voice: moreover, it could suck and cry vigorously, and apparently had free use of its limbs. But it should also be remembered that the child was blind, that it suffered with constant and painful spasms, and, above all, that the head was rapidly increasing in despite of the usual means of treatment recommended in such cases. The imperfect development of the brain, together with the general ramollissement of the cerebral mass, renders it highly probable that the child could not have survived long, even had the operation not been performed.

The quantity of fluid drawn off was barely sufficient to remove the distension; and it is well known that this operation has been repeatedly performed on the same subject, and under similar circumstances, not only without any immediate bad effects, but even with decided relief of all the most distressing symptoms.

Although the great development of the head rendered it highly probable that the effusion was into the ventricles, yet the previous history of the case left some hope that it might have been into the sac of the arachnoid, and that, under these circumstances, the operation would not only afford temporary relief, but even be followed by a permanent cure.—*Summary of Trans. of the College of Phys. of Phila.*, vol. iii. No. 2.

Fibrous Tumour removed from the Lobe of the Ear.—Dr. GEO. W. NORRIS read to the Philadelphia College of Physicians, July 2d, the following case:—

Ruth Tucker, a large and healthy negro woman, aged twenty-four, was admitted into the Pennsylvania Hospital in January last, on account of tumours developed in the lobe of each ear. She stated that between five and six years before she had her ears pierced, and that soon afterwards brass rings were inserted into them. These she wore for about a month, when the punctures, which had been from the first irritated by the metal, became so sore that the rings were removed. Some swelling had already shown itself around the punctures before they were taken out, and this increased in both ears, and gave origin to the tumours, which had continued since slowly to enlarge.

These tumours were heavy, and appeared to the feel to be lobulated and almost cartilaginous; they were not painful when handled; the skin covering them was perfectly healthy, and, except on account of the weight and size of the larger one, she experienced no inconvenience from them. The left one was much the larger of the two, and fully equalled in size a turkey's egg. The right had attained about half that bulk. Both were attached by a pedicle of some extent to the lower part of the ear and integuments below that organ. On the 19th, I removed the tumour from the right side, after which cicatrization took place kindly, though very slowly. The skin at the incised part was unusually vascular, and I observed, before the healing process was complete, that the cicatrix had become slightly elevated and hard, as if there was about to be a renewal of the growth. She left the hospital on the 3d of May, having been retained on account of some ulceration of the arm, the result of a burn. This, which had been deep and was followed by a slough, it may be interesting to observe, left a perfectly healthy cicatrix, but, on the lower part of her neck and breast, I discovered two or three *small* but long elevations of the skin, very similar to the appearance of the cicatrix following the incision which I had made for the removal of the tumour from the ear, which she stated to me had appeared after a scald which she had received in childhood.

In connection with this case, I may observe that I have twice previously removed similar tumours from the ear at the hospital; once in April, 1847, in a woman aged fifty, where the tumour was of four years growth, and had reached the size of a bantam's egg, but affecting only one side; and, on another occasion, in March, 1848, in a younger woman, where the tumours were of the dimensions of ordinary hickory nuts, and occupied both ears. Both of the patients were blacks in good health, and in both the growths had followed perforation of the ears for the introduction of rings; and, in the one last mentioned, there was decided evidence of a return of the affection when I last saw the patient, some months after the operation. Examination of these tumours presented appearances precisely similar to that which has just been given.

In one of our old hospital case books, I find that a similar disease has been before noticed there. The patient was in this instance, too, a black woman, who discovered, soon after her ears were perforated, a kind of pimple at each of the orifices. The two of these on the right ear, and the posterior one on the left, are described as having grown to tumours of the width of an inch with narrow necks. They were excised by Dr. Parrish, in 1817. It is stated that the healing of the wound consequent on the operation was slow, and that, on dissection, the tumours presented a cartilaginous appearance.

The tumours in all of the above instances, though varying very much in size, were of the same character, and seemed to be true productions from the cutis. The first appearance of the disease is a simple hard elevation of the skin, very similar to the raised cicatrices which are sometimes seen to follow burns, and is unaccompanied by any heat, pain, or glandular enlargement. In two of the three instances in which I removed the tumours, there was a commencement of reproduction of the disease soon afterwards, though the incisions in all of them were made beyond the thickened structure. All of the patients were free from any constitutional vice. From having observed the above three cases of this affection within as many years, all arising from the same cause, situated in the same part, and occurring in the same race, and having never met with any mention of similar observations in the course of my reading, I have thought that, along with the specimen which I last removed, and the minute account of

the dissection which has been furnished of it by our curator, a brief description of the cases might prove of interest to some members of the college.

The only disease which it at all resembles is that which was first described by Alibert as *keloides*. Whether or not the above cases belong to that rare affection, I must leave others to determine.—*Ibid.*

On the Manner in which External Impressions made upon the Teeth are conveyed to the Nervous Pulp within.—Dr. JOHN NEILL called the attention of the Philadelphia College of Physicians, at a late meeting (April 2d), to the fact that no satisfactory explanation had yet been offered of the manner in which external impressions made upon the teeth are conveyed to their nervous pulp within. There is no difficulty in understanding the manner in which the nerves of the eye, of the olfactory organs, of the tongue, the skin, &c., are reached by the impressions for the reception and transmission of which they are respectively designed. But in the teeth the nerves are inclosed in a bony case; and yet experience teaches us that impressions made upon the teeth do reach the nerve within, and are conveyed through it to the nervous centre. How then is it that heat, cold, acids, or pressure when applied to the external surface of the teeth affect the nervous pulp within them? Some may suppose that the impression is transmitted to the nerve through the gums. It is doubtful whether the gums in their ordinary healthy condition possess any very great amount of nervous sensibility; at any rate this explanation is untenable. The old doctrine of increased sensibility of the teeth from inflammation has passed away: the teeth have neither blood-vessels nor nerves, and consequently cannot become the seat of inflammation. Dr. Neill believed that the transmission of impressions through the teeth may be explained by a reference to their anatomical structure. The parietes of the tooth are not perfectly solid; even the enamel is composed of a congeries of hexagonal prisms, which are not in perfect juxtaposition. This may be shown by the microscope. The bony portion beneath the enamel is even less solid; it is somewhat allied to bone, and consists of a number of minute hollow tubules, which pass from the circumference to the centre of the teeth, with the internal cavity of which they communicate; these tubules are filled with a fluid secreted by the pulp. Now if the tubules, thus filled, pass from the circumference to the interior of the teeth, may not pressure applied without, by compressing the enamel and the fluid of the tubules, affect the nervous pulp within, by subjecting the latter to a species of hydrostatic pressure, the amount of which can be measured? Whatever reduces the thickness of the enamel, or uncovers any portion of the dentine, increases the painful impressions caused by external pressure. Thus acid, by removing the mucus by which the teeth are ordinarily covered and perhaps a portion of the enamel, increases their sensibility to external impressions. When the teeth have been affected by acids, no disagreeable sensation is experienced until pressure is made upon them. Mr. Nasmyth, it is true, denies the tubular structure of the dentine, but it is admitted by all other writers on the anatomy of the teeth. Dr. Neill presented a specimen which would, he remarked, under the microscope, show very clearly the tubular structure of the dentine. Of the conveyance of impression to nervous expansions by hydrostatic pressure, we have an example in the ear. Dr. Neill supposed that all those substances which are known to relieve toothache, when applied to the affected tooth, acted by coagulating the fluid of the tubuli, and thus preventing hydrostatic pressure.—*Summary of the Trans. of the Coll. of Phys. of Philad.*, vol. iii. No. 2.

Comparative Size and Shape of the Thyroid Foramen in the Male and Female Innominatum.—Dr. JOHN NEILL called the attention of the Philadelphia College of Physicians at their meeting of the 4th of June last to this subject.

He believed that many teachers of anatomy and of obstetrics were in error upon this subject, while others had failed to point out the difference in the male and female pelvis in this respect; that this was the case especially in this city, and perhaps in this country generally.

He had learned that Dr. Wistar and Dr. James taught that in the *female* the foramen was *oval*, and that in the *male* it was *triangular*, although there was no statement upon the subject in the old edition of Wistar's Anatomy which he

had examined, nor in the more recent edition known as Pancoast's Wistar. Dr. Horner also stated, in his work, that "in the male it is triangular, in the female rather oval." On the other hand, Meckel, Cloquet, Cruveilhier, Harrison, and Quain and Sharpey make a statement precisely the reverse of this.

The lecturers upon obstetrics with whom he had conversed either teach the former view, or are silent upon the subject. Denman, Baudelocque, and Maygrier say nothing. Neither does Monroe nor Cheselden, both high authority on the bones, nor Winslow, Bell, Bartholin, &c. &c.

Soemmering says "the foramen is elliptical in children, and triangular in adults." Wilson and Von Behr say it is triangular in women.

In order to satisfy his own mind on the subject, Dr. Neill had, up to this period, examined thirty-two skeletons, and the result was so contrary to the view which he, and perhaps most of the Fellows, had been taught, that he had thought it worth while to prepare a chart, exhibiting diagrams of the male innominata in one column, and those of the female in another, to show at a glance the distinctive difference.

He believed, from an inspection of this, every one would be convinced that the foramen in the *male* is *oval*, while in the *female*, it is *triangular*.

It will also be observed that the male foramen is longer and narrower, and that the line representing the long axis is more vertical, and nearly parallel to the rami of the pubes and ischium; whereas, in the female the foramen is not only smaller and triangular, but that the apex of the triangle is downward, that its internal side is nearly parallel to the rami of the ischium and pubes, and that the base of the triangle is proportional to the chord of the arch of the pubes.

He remarked that the establishment of this fact, by investigation or by authority, would not interest the Fellows of the College in a practical point of view, its only value consisting in its affording another mark of distinction between the male and female skeletons.—*Ibid*.

Case of Spontaneous Evolution of the Fœtus.—In the foreign department of our last number, p. 243, will be found recorded an interesting case of this description, and we add a second reported by Dr. J. S. MITCHELL, in the *Charleston Medical Journal* for May last: "On the morning of the 10th of June, I was sent for to visit Mrs. W., whom I found engaged in her third accouchement. An examination *per vaginam* discovered to me a head presentation; the os uteri was slightly dilated, and the pains, though trifling, were frequent. Having other engagements of importance, I ventured to leave with the usual promise of a speedy return. It was not long after my departure, when I was again sent for, and I hurried to the bedside of my patient. I found, on my arrival, that the head of the fœtus had already passed through the os externum, and before I could make any arrangements for assisting the delivery, the remainder of the body had passed out. I quickly placed my hand upon the abdomen, with the view of securing a proper contraction of the uterus, when I discovered there a tumour of sufficient size to excite some suspicions as to the presence of a second in utero. I separated the fœtus from its mother, and prepared for further examination, when I discovered that the last effort of the uterus, which had expelled the first infant, had forced down the arm and shoulder of the second. This condition of things did not last long, however, for the uterus again contracting, I had the satisfaction of *seeing* the arm recede, and the nates, kindly taking its place, protruded through the vulva. I immediately seized it, determined that the capricious conduct of the infant should not again leave me in doubt and anxiety. In due time the nates was delivered, the shoulder and head following in turn. Thus ended, favourably to mother and child, a case from which I had a right, under ordinary circumstances, to expect much difficulty; another evidence of the fact that a case, under arm and shoulder presentation, may, by a spontaneous evolution of the fœtus, terminate unassisted, the breech being first expelled.

Twins.—One Fœtus blighted, but retained until full period.—Dr. C. MACGIBBON relates, in the *New Orleans Med. and Surg. Journal* (Sept. 1850), a case of twins, where one of the fœtuses was blighted about the fourth month of

gestation, but retained with its fellow until full period. The blighted foetus was first extruded. The second child was full grown, but was still-born.

Another case of two foetuses of unequal development, extracted at the same time, is related by Dr. I. B. Davis of Franklin co., Ohio, in the *Ohio Med. and Surg. Journ.* for Sept. 1850. One of these foetuses was large, and had evidently reached the full period of seven months. The second appeared to be of only ten weeks growth, but was fresh and free from all sign of putrefaction. The mother, who had borne several living children, and had frequently aborted, considered herself to be in the seventh month of pregnancy.

Blighted Foetuses retained till Full Period.—Dr. T. C. OSBORNE records, in the *Western Journ. of Med. and Surg.* (July, 1850), a case in which a foetus of three months development was retained and expelled at full period.

Ovariectomy.—Dr. P. J. BUCKNER, of Georgetown, Ohio, relates (*The Ohio Med. and Surg. Journ.*, Sept. 1850) a case of ovarian tumour successfully removed through an incision eight inches in length. The subject of it was Mrs. C—, thirty-nine years of age, the mother of several children. The tumours had numerous adhesions by bands of organized lymph, which were divided; it arose from the right ovary and broad ligament. The pedicle was secured by a single ligature, which came away the thirty-ninth day after the operation. Many alarming and dangerous symptoms followed, but the patient recovered.

Dr. Buckner alludes to a second case reported by him in the *Western Lancet* for Oct. 1848, in which he operated successfully, and also gives the details of a third case, in which the patient died the sixth day after the operation from peritoneal inflammation.

Collodion in Mammary Inflammation. (*North-Western Med. and Surg. Journ.*, Sept. 1850).—Disheartened by the general want of success in preventing supuration, in mammary inflammation, by the ordinary means of treatment, and satisfied that the most prominent indication of cure was to overcome the freedom with which the blood is forced into the mammae, and, by compression, cause the absorption of the lymph, Dr. JOHN EVANS states that he determined to use a complete coating of collodion to obtain the benefit of its contraction, and that in no case in which he has resorted to it, except one, has the slightest suppuration taken place. In every instance, the relief from suffering has been prompt, and no inconvenience has resulted from its use in any case, except the slight smarting that attends its application.

Treatment of Dropsical Affections by Injections of Iodine.—In our No. for July, 1848, p. 262, we noticed a case of spina bifida successfully treated by Prof. BRAINARD, of Chicago, by injections of iodine and iodide of potassa in solution. In a late paper in the *N. W. Med. and Surg. Journ.* (July, 1850), the professor says that this, the first of his published cases, was not by any means the first case of dropsical effusion in which he had used injections. "As early," he says, "as Dec. 1845, I threw into the peritoneum gr. xv. iod. potass, dissolved in f. oz. j dist. water, after having as perfectly as possible evacuated the fluid by tapping. An acute smarting pain was produced, which subsided in a few minutes, and no sign of inflammation followed. The patient returned home, and I lost sight of him.

"Since that time, Dr. F. Hagemann, of this city, injected the peritoneum of a dropsical patient twice, at my request. I have not notes of the case; it was one of incurable organic disease, but the injections produced no inflammation.

"During the past winter, I injected the abdomen of a patient labouring under general dropsy, as well as ascites from disease of the heart, with gr. iv. iodine and gr. viij iod. pot. in solution, without drawing off the fluid. It was followed by no signs of inflammation, but the fluid in the peritoneum was absorbed, and a great amelioration of symptoms followed.

"These were all supposed to be hopeless cases of disease in which the injection was used, not with the expectation of cure, but to ascertain the danger which there might be of producing inflammation. The result, in that respect, was perfectly satisfactory. I can now also add two other cases treated in a

similar manner; one by Dr. M. Clure, of Dundee, Ill., and another by Prof. Mussey. These gentlemen have stated to me that they have recently used the injection without inflammation resulting. In the *Am. Journal of Medicine* for Oct. 1847, p. 491, is the report of a case of ascites cured by Mr. Leriche, of Lyons, in this manner. The injection was strong, and made, in this instance, after all the fluid had been drawn off.

"This practice seems to have been tried with success a long time ago. Pereira speaks of it, and refers to the Philosophical Transactions of 1774.

"Samuel Cooper, in his *Surgical Dictionary*, says he has seen two fatal cases from the practice. As they were both, as far as can be judged, from the injection of alcohol, after the fluid was evacuated by tapping, it is only surprising that one of the patients should have survived for a long time. Such cases do not authorize us to reject the practice when properly conducted, or justify the conclusion that it is necessarily dangerous.

"It may then be considered an established fact that injections of this kind may be made, with suitable care, without danger of producing inflammation. It remained to be shown that dropsical effusions could be cured without such inflammation or adhesion of the sac in which it was situated.

"A man applied to me, during the past winter, with a large hydrocele, of eighteen months' standing. Injected f. dr. j of a solution of iod. potas. and iodine, gr. j of the latter to gr. xij of the former, to the oz. of water, without drawing off any fluid, the solution being thrown in through an exploring canula. This was subsequently repeated twice, and at the end of six weeks scarcely any trace of effusion remained, the man having continued his labour, and felt but slight tenderness in the organ."

The professor has also recently treated three cases of spina bifida, all associated with hydrocephalus, and therefore unfavourable for perfect cure, by iodine injections. They all terminated fatally. These cases, Prof. B. says, justify the following inferences:—

"1. Injections into cavities affected with dropsies may be made without great danger; the violence of the symptoms will depend upon the strength of the injection, the quantity of fluid present, and the duration of the disease. Old cases, when the membrane is thickened, or when the quantity of fluid is great, or when the surface has gradually become accustomed to the presence of the fluid, are those in which there is least danger to be apprehended.

"2. Spina bifida is generally a curable disease by such a treatment. Still, I would by no means assert that success can be always expected. It is sometimes associated with malformations or incurable disease. The internal surface of the sac is often inlaid, in a great part of its surface, by the trunks of the sacral nerves. A puncture of one of these, whether in tapping, injecting, or acupuncture, may be followed by serious results. This frequent presence of nervous trunks is a fatal objection to excision of the coverings of the tumour, to fetch the edges together by stitches.

"In addition, erysipelas or convulsions may occur in such cases from a simple puncture.

"Still, in general, I have no doubt the treatment will be found, as compared with any other known method, safe and efficient.

"The following are the circumstances to which I would particularly call attention as necessary to its safety and success:—

"Using not more than 1-32d part of a grain of iodine, and three times as much iod. pot. at the commencement, dissolved in dist. water; and *be sure it is of perfect purity, and the solution recently made.*

"As long as it produces moderate inflammation, do not increase the quantity.

"Make the puncture one-fourth of an inch from the base of the tumour, in sound skin; it is much safer.

"Do not evacuate the tumour, or, if it escapes, replace the fluid drawn off by dist. water.

"If spasms should occur, the fluid might be withdrawn and dist. water injected.

"The child should be laid upon its face, and, if heat and tension occur, cold be applied to the part and head.

"As soon as the tension is past, collodion should be applied and re-applied

as long as it continues to diminish in size. When it ceases or increases, a new injection should be made.

"3. The cases of ascites treated by me thus far, in this method, were such as offered favourable opportunities for testing injections in reference to the inflammation they might produce; it was necessary first to remove an erroneous opinion concerning their danger. I regretted afterwards not having continued their use with the object of effecting a cure.

"It is probable that inflammation has little or no connection with cure of dropsies by injection. It is only necessary in such cases to change the elements of the fluid, in some considerable degree, and the tendency to effusion ceases, the action of absorption becomes more rapid. It might be supposed that the case here narrated, of hydrocephalus, militates against this opinion. We have already shown that it is most probable that the fluid in that case was the result of secretion from a morbid glandular structure in the choroid plexus, and not by any means an exhalation from the surface of the arachnoid membrane. If it were otherwise, and hydrocephalus were analogous to ascites, anasarca, and other serous effusions, the want of success in curing it would not militate against its utility in other cases. To any one who saw the child at the commencement of the treatment, and observed the rapidity with which the head increased, there could be no doubt that without treatment the term of its life could be but a few days or weeks at farthest. That the treatment cured the back, removed in a great degree the paralysis, and modified and retarded the progress of the disease in the head, will afford encouragement for applying it in any case less certainly fatal than that disease.

"The effect of these injections in filling and saturating every part of the system with the medicine, should not be overlooked. In the hydrocephalic child, the most violent symptoms followed effusion of the iodine into the stomach. There was no salivation, as is the case when the medicine is thrown into the veins. Several years since, having occasion to treat a vascular tumour of a doubtful nature, I threw into it a small quantity (the notes are not at hand) of iodine and hyd. potash in solution. In a few seconds, the patient experienced a bitter taste in the mouth, and a free salivation, which lasted a week. It was composed simply of enlarged veins, and the medicine had entered the circulation.

"Convinced of this fact, the operation was repeated, with the same result. In the case of injections into the head, on the contrary, the effect seemed to be to invigorate nutrition and fatten the child, which grew, notwithstanding the effects following each operation. The importance of being acquainted with the action of other substances than those used thus far, when introduced into the cavities and tissues of the body, the effects they may produce in other diseases, such as ovarian cysts, anasarca, &c., might with propriety be considered here. They will, however, naturally occur to the reflecting mind, and I shall defer their further notice until I can communicate some facts calculated to throw light on the subject."

Proceedings of the Fifth Annual Meeting of the Association of Medical Superintendents of American Institutions for the Insane.—The Association of Medical Superintendents of American Institutions for the Insane convened at the Tremont House in the city of Boston, on the 18th day of June, 1850, at 10 o'clock A. M.; the President, Dr. WILLIAM M. AWL, in the chair, and Dr. KIRKBRIDE, Secretary.

Present, Dr. JAMES BATES, of the Maine Insane Hospital, Augusta.

Dr. ANDREW McFARLAND, of the New Hampshire State Asylum, at Concord.

Dr. WILLIAM H. ROCKWELL, of the Vermont Asylum for the Insane, Brattleboro, Vt.

Dr. LUTHER V. BELL, of the McLean Asylum for the Insane, at Summerville, Mass.

Dr. C. H. STEDMAN, of the Boston Lunatic Hospital.

Dr. EDWARD JARVIS, of the Dorchester (Mass.) Private Asylum.

Dr. GEORGE CHANDLER, of the Massachusetts State Lunatic Hospital, at Worcester.

Dr. N. CUTTER, of the Pepperill (Mass.) Private Institution.

Dr. ISAAC RAY, of the Butler Hospital for the Insane, at Providence, R. I.

Dr. JOHN S. BUTLER, of the Connecticut Retreat for the Insane, at Hartford.

Dr. N. D. BENEDICT, of the New York State Lunatic Asylum, at Utica.

Dr. C. H. NICHOLS, of the Bloomingdale Asylum for the Insane, New York.

Dr. M. A. RANNEY, of the New York City Lunatic Asylum, on Blackwell's Island.

Dr. HENRY W. BUEL, of Sandford Hall (Private Institution), Flushing, N. Y.

Dr. H. A. BUTTOLPH, of the New Jersey State Lunatic Asylum, at Trenton.

Dr. THOMAS S. KIRKBRIDE, of the Pennsylvania Hospital for the Insane, at Philadelphia.

Dr. J. H. WORTHINGTON, of the Friends Asylum for the Insane, at Frankford, Pa.

Dr. WILLIAM S. HAINES, of the Philadelphia Lunatic Hospital, Blockley.

Dr. JOHN FONERDEN, of the Maryland Hospital for the Insane, at Baltimore.

Dr. JOHN M. GALT, of the Eastern Asylum of Virginia, at Williamsburg.

Dr. WILLIAM M. AWL, of the Ohio Lunatic Asylum, at Columbus.

Dr. S. HANBURY SMITH, of the Ohio Lunatic Asylum, at Columbus.

Dr. R. J. PATTERSON, of the Indiana Hospital for the Insane, at Indianapolis.

Dr. J. M. HIGGINS, of the Illinois Hospital for the Insane, at Jacksonville.

Dr. EDWARD MEAD, of the Chicago Private Retreat for the Insane (Illinois).

The minutes of the last meeting having been read, the President announced, in a feeling and appropriate address, the death of three members of the Association since its last meeting; Dr. Samuel B. Woodward, the first President of the Association, and formerly Superintendent of the Massachusetts State Lunatic Hospital—Dr. Amariah Brigham, Superintendent of the New York State Lunatic Asylum, and Vice President of the Association—and Dr. McNairy, Superintendent of the Tennessee Hospital for the Insane.

The Secretary reported that, as instructed by the Association, he had invited the Boards of Trustees or Managers of all the institutions for the insane, in the United States and British Provinces, to attend its meetings, and had received letters in reply from the Boards of Managers of the Maine Insane Hospital, Massachusetts General Hospital, Boston Lunatic Hospital, Friends Asylum, Pa., Maryland Hospital, and Eastern Asylum of Virginia. On motion of Dr. Bates, it was

Resolved, That each member of the Association be authorized to invite such gentlemen to attend its sessions as he may deem proper.

Dr. Bell stated that, in consequence of a full and well-written notice of the life and professional labours of our late associate, Dr. James Macdonald, of N. Y., having appeared in the *American Journal of Insanity*, he would suggest the adoption of that notice, instead of preparing another specially for the use of the Association, which was approved.

The President stated that, in obedience to the instructions of the Association, he had, soon after the last meeting, selected a subject for a report for each member, to all of whom due notice had been given, and from most of whom he had received answers accepting the duties assigned them.

An invitation from the Board of Trustees of the Boston Lunatic Hospital, to visit that institution to-morrow at 4½ P. M., was read and accepted.

On motion of Dr. Bell, it was

Resolved, That, in order to enable the members of the Association, while performing the regular business that may come before the meeting, so to arrange their sessions as most satisfactorily to apportion their time, and be able to enjoy the hospitality that may be extended to them, a business committee be appointed who shall, at the commencement of each morning session, report the papers to be read, and other matters to be attended to during the day. Drs. Bell, Bates, and Kirkbride were appointed the committee.

On motion of Dr. Rockwell, it was

Resolved, That a committee of three be appointed to prepare names to fill any vacancies that may exist in the offices of the Association. Drs. Rockwell, Benedict, and Kirkbride were appointed the committee.

Dr. Rockwell, from the committee to fill vacancies in the offices of the Asso-

ciation, nominated Dr. Luther V. Bell, as Vice President, in place of Dr. A. Brigham (deceased), which nomination was confirmed, and Dr. Bell duly elected Vice President of the Association.

An invitation from Drs. Cutter and Howe to visit their institution at Pepperill, Mass., was read, accepted, and referred to the business committee.

Dr. Stedman tendered to the members of the Association, in behalf of the Boston Society for Medical Improvement, an invitation to visit their cabinet, also one to visit the museum of the Medical College of Harvard University, which were accepted.

Dr. Jarvis tendered invitations to the members, in behalf of the Boston Museum of Natural History, the Boston Athenæum, and the Perkins Institution for the Blind, to visit those institutions, which were accepted.

Dr. Rockwell read a paper on the diet and dietetic regulations for the insane, which, after discussion by the members generally, was laid upon the table.

A letter was received and read from the librarian of the Massachusetts Historical Society, inviting the members of the Association to visit the Society's rooms during their stay in Boston, which was accepted.

Drs. Beck and Wing took seats with the Association as members of the Board of Managers of the New York State Lunatic Asylum.

Dr. Galt read a paper on the organization of Hospitals for the Insane, and Dr. Higgins on the subject of Resident Superintendents of Hospitals for the Insane. Then adjourned to 4 P. M.

AFTERNOON SESSION.—The Association met agreeably to adjournment.

The papers read by Drs. Galt and Higgins were called up for consideration, and the whole subject was fully discussed by the members generally, after which the reports were laid upon the table.

Dr. Bates read a report from the standing committee on the Medical Treatment of Insanity, which after discussion was laid upon the table.

An invitation from the librarian of the Boston Athenæum, for the members to visit the rooms during their stay in the city, was read and accepted. On motion of Dr. Bates, adjourned to 9 A. M., to-morrow.

SECOND DAY—MORNING SESSION.—The Association met agreeably to adjournment. The minutes of yesterday's proceedings were read and adopted.

Dr. John R. Allen, of the Kentucky Lunatic Asylum, Dr. John Waddell, of the Provincial Lunatic Asylum at St. Johns, New Brunswick, and Dr. James Douglass of the Quebec (Canada) Lunatic Asylum, appeared and took their seats as members of the Association.

Charles Edward Cook, and Otis Clapp, Esqrs., also took seats with the Association as members of the Board of Trustees of the Boston Lunatic Hospital. Dr. Kirkbride, from the committee on business, made a partial report, as required by the resolution of yesterday.

Dr. Ray read a report from the standing committee on the Medical Jurisprudence of Insanity, containing a project for a law regulating the legal relations of the insane, and which had been examined by, and received the sanction of, high judicial and legal authority; after the reading of the paper, on motion of Dr. Kirkbride, it was

Resolved, That the committee on business be instructed to have provided forthwith, for the use of the members, one hundred copies of the foregoing project of a law, and that the same be made the order of the day for the first session of the Association to-morrow morning.

Dr. Bell, from the committee on business, made a full report on the objects to be attended to by the Association during the day.

Dr. Bell read a paper on the use of narcotics in the treatment of insanity; after a full discussion of the subject by nearly all the members, the paper was laid upon the table.

Dr. Fonerden read a paper on the Modification of the Brain by habits, which, after discussion, was laid upon the table.

On motion of Dr. Kirkbride, adjourned to meet at the Boston Lunatic Hospital at 4½ o'clock P. M.

AFTERNOON SESSION.—The Association, after assembling, proceeded, under the guidance of Dr. Stedman and the Board of Trustees, to visit the Lunatic Hospital and other public institutions at South Boston.

After coming to order for business, Dr. Ranney read a paper on Insanity as it occurs among the pauper emigrants at the Lunatic Asylum on Blackwell's Island, near New York. After discussion, the paper was laid on the table.

A letter was read from Dr. Fremont, informing the Association that a paper, prepared by him, in reference to the past and present condition of the Insane in Canada East, would be presented to, and read before the Association by his colleague, Dr. Douglass.

On motion of Dr. Galt, adjourned to meet at the Tremont House at 9 o'clock to-morrow morning.

THIRD DAY—MORNING SESSION.—The Association met agreeably to adjournment.

The minutes of yesterday's proceedings were read and adopted.

Dr. Kirkbride, on behalf of the business committee, *moved* that the consideration of Dr. Ray's project of a law for regulating the legal relations of the Insane, which was made the order of the day for this morning, be deferred for the present, owing to the late period at which the printed copies have been placed in the hands of the members, which motion was agreed to.

On motion of Dr. Allen, it was

Resolved, That the Hon. Mayor of the city of Boston be requested to furnish us, for publication, a report of his eloquent address, delivered at South Boston last evening; and also, that the President of this Association be requested to furnish, for the same purpose, his appropriate address in reply.

Resolved, That the Secretary furnish each of the above named gentlemen with a copy of the preceding resolution.

An invitation to visit the University of Cambridge, and the Observatory, was received and accepted for 11 o'clock to-morrow.

An invitation from the Mayor and public authorities of the city of Boston, asking the members of the Association to visit the Harbour and Bay, and to inspect the public institutions in the vicinity, to-morrow afternoon, was received and accepted.

The Association, on motion of Dr. Bell, resolved to visit the Massachusetts General Hospital, on the invitation of Dr. Hayward, at 3½ o'clock, and the M'Lean Asylum for the Insane, on his own invitation, at 4½ o'clock this afternoon.

Dr. Galt read a paper on the Medico-legal Relations of the Insane, the discussion on which, on motion of Dr. Bates, was deferred till the project of a law, prepared by Dr. Ray, shall come up for consideration.

Dr. Worthington read a paper on the use of baths in the treatment of Insanity, which, after discussion, was laid upon the table.

Dr. Kirkbride, from the standing committee on the Construction of Hospitals for the Insane, read a report on that subject, which, after discussion, was laid upon the table.

On motion of Dr. Ray, it was

Resolved, That the standing committee on the Construction of Hospitals for the Insane be requested, previous to the next meeting of the Association, to prepare a series of resolutions or propositions, affirming the well-ascertained opinions of this body in reference to the fundamental principles which should regulate the erection and internal arrangements of American Hospitals for the Insane.

Dr. Jarvis commenced reading a paper on the Comparative Frequency, Curability, and Mortality of Insanity in the two sexes. After proceeding for some time, on motion of Dr. Bell, the further reading of the paper was deferred till the next session.

On motion of Dr. Allen, adjourned to meet at the M'Lean Asylum, at 4½ o'clock P. M.

AFTERNOON SESSION.—Having previously visited the Massachusetts General Hospital, the Association met, agreeably to adjournment, at the M'Lean Asylum, under the care of Dr. Bell, and guided by whom, they visited and examined the different parts of that excellent institution.

Having come to order for business, Dr. Jarvis concluded the reading of his paper, commenced this morning, which, after discussion, was laid upon the table.

Dr. Bell, after referring to a paper read by him before the Association last year, relative to a somewhat peculiar form of mental disease, moved that a committee, consisting of Drs. Awl, Kirkbride, and Douglass, be appointed to visit a case of the disease then under his care in the Asylum, and to report the result of their observations, which was agreed to.

The committee, having examined the patient, reported that it was a well-marked case of the form of disease alluded to, and although not often seen in institutions in the interior, is frequently met with in those near large cities, where cases manifesting much mental disturbance are commonly sent at once to a Hospital for the Insane.

On motion of Dr. Ray, adjourned to meet at the Tremont House at 8 o'clock to-morrow morning.

FOURTH DAY—MORNING SESSION.—The Association met agreeably to adjournment.

The minutes of yesterday's proceedings were read and adopted.

Dr. Bell, from the committee on Business, made the usual report as to the proceedings of the day.

Dr. Douglass read a paper prepared by his colleague, Dr. Fremont, on the past and present condition of the Insane in Canada East. After discussion, the paper was laid upon the table.

Dr. Galt read a paper on Water Closets, which, after discussion, was laid upon the table.

The Association then proceeded to the consideration of the project of a law regulating the legal relations of the Insane, and after a full discussion the further consideration of the subject was postponed until the next session.

On motion of Dr. Bates, adjourned to meet at 9 P. M.

EVENING SESSION.—After visiting the University of Cambridge, and the Observatory, the Association passed the afternoon as the guests of the corporate authorities of the city of Boston, in an excursion down the Harbour and Bay, in examining the public institutions in that vicinity, and in partaking of the sumptuous hospitality provided on the occasion, and then met for the transaction of business, agreeably to adjournment.

Dr. Bell offered the following resolutions, which were unanimously adopted, viz :—

Resolved, That this Association has felt, beyond the power of adequate expression, the profound solemnity which has been thrown around us, on occasion of its present meeting, by the loss of two of its members so prominent in the history of its organization, as well as in the records of the provision for the Insane in this country, and with still more sensibility, in view of the exalted personal worth, the amiable, cheerful, and communicative manners, and pure, self-sacrificing lives of the deceased.

Resolved, That the deep and general regret which filled the mind of the whole philanthropic community of an entire section of country and circles where they were best known, uttered in a thousand forms of expression, leaves us in no doubt that their virtues, merits, and devotion to great public duties have been appreciated in a degree commensurate with their just claims, and leaving neither place nor necessity for any long-drawn eulogium.

Resolved, That notwithstanding the full justice which has been done to the public and private character of our distinguished friends, we still feel that the members of this Association, more intimately and fully acquainted with their peculiar traits of service and sacrifice in our specialty, ought not to be satisfied without a more particular testimonial of our feelings and opinions as to our deceased brothers; we therefore earnestly and respectfully request that Dr. Chandler would prepare for the next meeting of the Association a biographical sketch of the late Dr. Woodward, and that Dr. Nicholls perform the same duty as regards the late Dr. Brigham.

On motion of Dr. Kirkbride, it was

Resolved, That Dr. Allen be requested to prepare an obituary notice of our late fellow member, Dr. McNairy, of the Tennessee Hospital for the Insane.

On motion of Dr. Bell, it was

Resolved, That the same course be adopted in reference to papers to be read before the Association at its next meeting, as was agreed upon last year.

On motion of Dr. Allen, it was

Resolved, That this Association regard with deep interest the progress of the magnificent project, which has been and continues to be urged by Miss D. L. Dix, on the consideration of Congress, proposing the grant of a portion of the public domain, by the Federal Government, the proceeds of which are to be devoted to the endowment of the public charities throughout the country, and that it meets with our unqualified sanction.

The subject of a project for a law regulating the legal relations of the Insane being again under consideration, on motion of Dr. Bell, it was

Resolved, That the same be recommitted, and that the committee report to the next annual meeting.

On motion of Dr. Allen, it was

Resolved, That a committee be appointed to prepare resolutions of thanks to the various public bodies and institutions, official and private citizens, to whom the members of the Association have been indebted for so much of the pleasure of their very gratifying visit to Boston. Drs. Allen, Kirkbride, and Benedict were appointed the committee.

Dr. Kirkbride tendered to the Association an invitation to hold its next meeting in the city of Philadelphia, when, on motion of Dr. Bell, it was

Resolved, That when the Association adjourns, it will adjourn to meet in the city of Philadelphia, on the third Monday of May, 1851, at 10 o'clock A. M.

On motion of Dr. Bates, adjourned to meet at 8 o'clock to-morrow morning.

FIFTH DAY—MORNING SESSION.—The Association met agreeably to adjournment.

The minutes of yesterday's proceedings were read and adopted.

Dr. Kirkbride offered the following resolution, which was unanimously adopted, viz :—

Resolved, That the members of this Association have visited and examined, with great interest and satisfaction, the McLean Asylum for the Insane, under the care of Dr. Bell, and the Boston Lunatic Hospital, under the care of Dr. Stedman, and desire to express to these gentlemen our sincere thanks for their marked courtesy and attention, for their bountiful hospitality, and for their steady and unwearied efforts to promote our comfort and pleasure during our very gratifying visit to the city of Boston.

Dr. Allen, from the committee appointed last evening, reported the following series of resolutions, which were unanimously adopted, viz :—

Resolved, That the grateful acknowledgments of this Association be tendered to the Mayor, Common Council, and the citizens of Boston, for the flattering reception we have met at their hands, and their lavish hospitalities which have been tendered to, and enjoyed by us, and for the pleasure afforded us in a general examination of the public institutions under their control.

Resolved, That our thanks are due to the Trustees of the public institutions of South Boston for polite attention and liberal hospitalities during our visit to their institutions, and to the Trustees of the Massachusetts General Hospital, for similar kindness and attention.

Resolved, That our thanks are also due to Drs. Hayward and Townsend, Surgeons, and Mr. R. Girdler, Superintendent of the Massachusetts General Hospital; to Messrs. Harris and Sibley, Librarians, and other officers of Harvard University; and to the Messrs. Bond, of the Observatory, for attentions while visiting the institutions under their charge; and to the officers of the Boston Society for Medical Improvement, Boston Museum of Natural History, Massachusetts Historical Society, Boston Atheneum, and Perkins' Institution for the Blind, for invitations to visit their several institutions, and to the Rev. Lewis Dwight for valuable documents and other attentions.

Resolved, That our acknowledgments are due to Messrs. Tucker and Parker, the proprietors of the Tremont House, for the ample and elegant accommodations they have afforded us without charge, for the transaction of the business of the Association.

Resolved, That the Secretary be directed to furnish his Honour, the Mayor of Boston, with a copy of the preceding resolutions.

On motion of Dr. Allen, it was

Resolved, That the thanks of this Association be tendered to the President,

for his able and impartial administration of his arduous duties, and to the Secretary, for his efficient discharge of the laborious functions of his office.

The Treasurer reported, that, after paying all the demands against the Association, there remained a balance of twenty-three cents in his hands.

On motion of Dr. Stedman, it was

Resolved, That the Secretary be instructed to furnish a copy of the proceedings of the Association to the Editor of the *American Journal of Insanity*, and to the editors of the various medical journals in the United States and Canada, for publication in their respective periodicals.

On motion of Dr. Smith, it was

Resolved, That a committee of three be appointed by the chair, whose duty it shall be to take into consideration the whole subject of publishing, and to report their views to the Association at its next meeting. Drs. Smith, Allen, and Kirkbride were appointed the committee.

On motion of Dr. Benedict, adjourned to meet in the city of Philadelphia, on the third Monday of May, 1851, at 10 o'clock A. M.

THOMAS S. KIRKBRIDE, *Sec'y.*

Statistics of the Medical Colleges of the United States for the Session of 1849-50.

	Number of Students.	Number of Graduates.
Medical School of Maine - - -	-	-
Dartmouth Medical College (N. H.) - -	-	-
Medical College of Castleton, Vt. - - -	-	39
Vermont Medical College - - -	-	-
Medical Department of Harvard University (Mass.)	127	33
Berkshire Medical Institute - - -	93	23
Medical Institute of Yale College - - -	-	16
Med. Dep. Univ. State of New York (Coll. Phys. and Surg.)	208	49
Med. Dep. Univ. City of New York - - -	404	111
Albany Medical College - - -	96	26
Geneva Medical College - - -	58	-
Med. Dep. University of Buffalo, N. Y. - -	115	27
Medical Department University of Pennsylvania -	438	178
Jefferson Medical College - - -	576	211
Med. Dep. of Pennsylvania College - - -	106	34
Philadelphia College of Medicine - - -	-	-
Medical Department University of Maryland -	171	66
Med. Dep. of Washington University, Md. -	-	-
Med. Dep. of Columbian College, D. C. - -	-	-
Med. Dep. University of Virginia - - -	-	-
Med. Dep. of Hampden Sidney College, Va. -	-	-
Winchester Medical College, Va. - - -	-	-
Medical College of State of South Carolina -	174	62
Medical College of Georgia - - -	179	44
Med. Dep. University of Louisiana - - -	175	35
Memphis Medical College - - -	-	-
Medical Department of Transylvania University -	92	32
Med. Dep. University of Louisville - - -	376	113
Medical College of Ohio - - -	-	42
Starling Medical College, Ohio - - -	151	52
Med. Dep. Western Reserve College (Cleveland) -	256	79
Indiana Medical College - - -	40	6
Indiana Central Medical College - - -	50	10
Rush Medical College - - -	117	42
College of Physicians and Surgeons of the Iowa University - - -	51	15
Med. Dep. Univ. State of Missouri - - -	110	34
Med. Dep. St. Louis University - - -	112	32
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